Anritsu

MW0944B
Plug-in Unit for MW9060A
Service Manual

MP MASTER
MA35859

MW0944B
Plug-in Unit for MW9060A
Service Manual

Third Edition

Measuring Instruments Division
Measurement Group

ANRITSU CORPORATION

DEC.
1994

M-W0719BE-3.0

MW0944B Plug-in Unit for MW9060A

Service Manual

July 1993 (First Edition)

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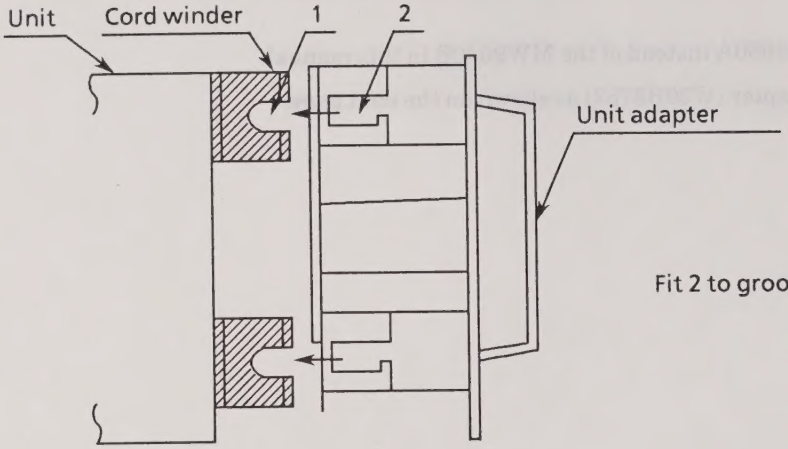
Printed in Japan

MANUAL CHANGE FOR MW0944B

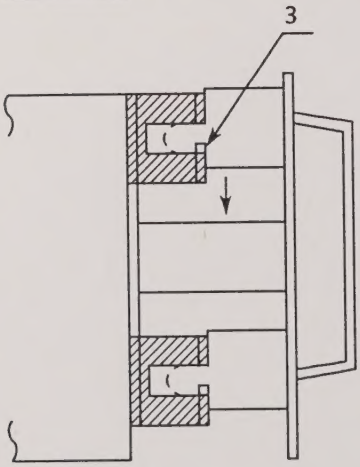
Read the type name as MW9060A instead of the MW9040B in this manual.

Fitting method for Unit Adapter (W39B8752) as shown on the next page.

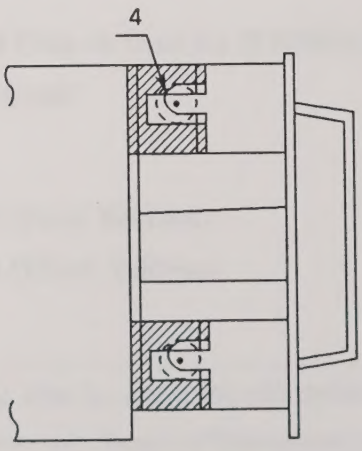
• Fitting Method for Unit Adapter



Fit 2 to groove of cord winder 1.



Fit groove of 3 to cord winder.



Lock adapter by turning knob 4 clockwise.

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CERTIFICATION

ANRITSU CORPORATION certifies that this instrument has been thoroughly tested and inspected, and found to meet published specifications prior to shipping.
Anritsu further certifies that its calibration measurements are based on the Japanese Electrotechnical Laboratory and Radio Research Laboratory standards.

WARRANTY

All parts of this product are warranted by Anritsu Corporation of Japan against defects in material or workmanship for a period of one year from the date of delivery.
In the event of a defect occurring during the warranty period, Anritsu Corporation will repair or replace this product within a reasonable period of time after notification, free-of-charge, provided that: it is returned to Anritsu; has not been misused; has not been damaged by an act of God; and that the user has followed the instructions in the operation manual.

Any unauthorized modification, repair, or attempt to repair, will render this warranty void.

This warranty is effective only for the original purchaser of this product and is not transferable if it is resold.

ALL OTHER EXPRESSED WARRANTIES ARE DISCLAIMED AND ALL IMPLIED WARRANTIES FOR THIS PRODUCT, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF DELIVERY. IN NO EVENT SHALL ANRITSU CORPORATION BE LIABLE TO THE CUSTOMER FOR ANY DAMAGES, INCLUDING LOST PROFITS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES, ARISING OUT OF THE USE OR INABILITY TO USE THIS PRODUCT.

All requests for repair or replacement under this warranty must be made as soon as possible after the defect has been noticed and must be directed to Anritsu Corporation or its representative in your area.

MW0944B Plug-in Unit for MW9040B

Service Manual

May 1992 (First Edition)

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ERRATA (MW0944B Service Manual) (1/1)

ITEM	DESCRIPTION		
	ERROR	CORRECT	rev. No.
P.5-15	Parts List of : MW0944B SMF 1.31/1.55UM UNIT A2 AMP (W4W22001 11/19) Q29 IC MC10E101FN	 Q29 IC 10E101	3.1

WARNING

NO OPERATOR SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED PERSONNEL.

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Note:

WARNINGs, ***CAUTION***s, ***Note***s, and Explanatory footnotes are used in this manual. Their meanings are given below:

WARNING:	***WARNING is used when there is a personal injury hazard.***
CAUTION:	***CAUTION is used when the equipment may be damaged.***
Note:	Note is used to provide information about exceptions, corrections, and restrictions.
Explanatory footnote:	Explanatory footnotes provide comments on the same page as the text, figure or table. They are referenced by either an asterisk (*) or by combination of an asterisk and numeral.

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HISTORY OF MODIFICATIONS
(MW0944B Ser.)

OCT. 30 '92

ITEM	DESCRIPTION		Applicable Serial No.
	Before Modification	After Modification	
P.5-17	Parts List of: MW0944B SMF1.31/1.55UM UNIT A2 AMP (W4W22001 19/19) R145 Not labeled	R145 CARBON FILM RESISTOR ARD25T105J 1MΩ, ± 5%, 1/4W	From MT06694

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SECTION 1
GENERAL

1.1 Introduction

This service manual describes the repair and adjustment of the MW0944B plug-in unit for the MW0940B.

Section 2 describes how to disassemble and reassemble the plug-in unit, and the internal configuration.

Section 3 describes how to torubleshoot and repair when a problem occurs during measurements or when abnormalities are detected during performance checks.

Section 4 describes how to adjust the plug-in unit after repair or performance checks.

Section 5 describes the circuit parts lists and how to order replacement parts.

Refer to the MW9040B main-frame service manual during service.

1.2 Safety Precautions

Warning:

The plug-in unit use a laser diode as the light source. Do not look directly into the laser radiation emitted from OUTPUT.

An OUTPUT connector protective cover is provided to protect the operator. A safety circuit is also installed to prevent emission of laser radiation until the optical fiber connector is connected.

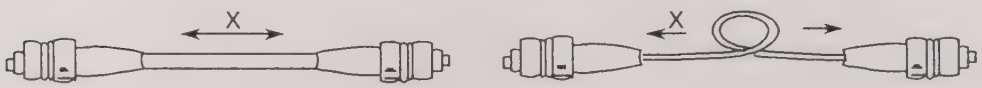
Cautions:

1. Insert or remove the plug-in unit only when the MW9040B POWER switch is set to OFF. And confirm that the plug-in unit is locked after mounting it.
2. Always ground the ground terminals (⏚) on the MW9040B mainframe rear panel to prevent accidental electric shock.
3. Do not touch or insert metal items into the connectors in the plug-in unit when the power switch is on.
4. Do not plug the power cord into the ac outlet when the power switch is on.
5. Make sure the line voltage to be supplied. Also confirm that the correct fuse is being used (Refer to the MW9040B Operation Manual).

Notes:

Precautions on handling optical fiber cable and optical connectors

1. Do not pull the optical fiber cable too hard or bend it too sharply.



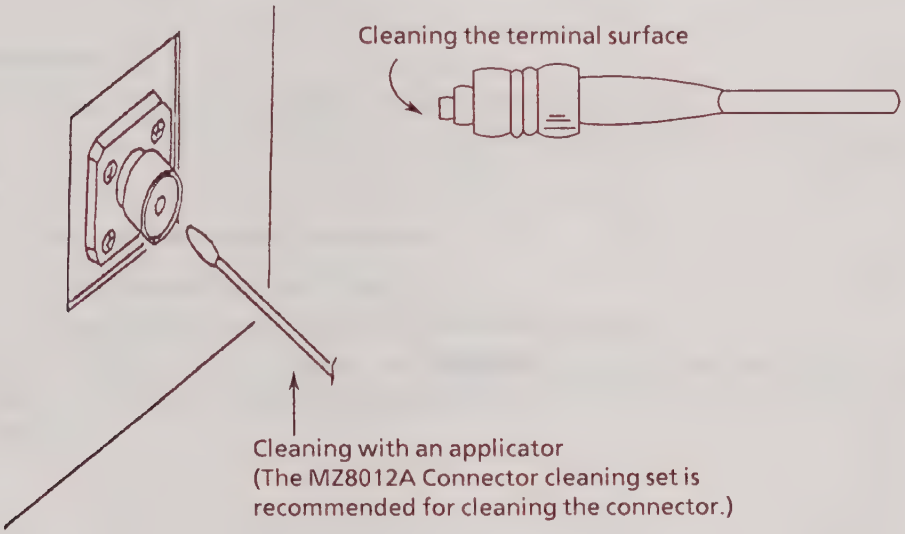
2. Do not twist the fiber cable where it is connected to the optical connector.

3. Confirm that there is no dust or condensation on the optical adapter or plug. Be especially careful of the fiber terminal surface. Use caps and always keep the parts clean. An applicator moistened with alcohol should be used for cleaning.

4. If the fiber under test is connected to the OUTPUT connector and no trace is displayed on the CRT although the ON/OFF switch is on and the LED is on, it may be due to dust in the connector, or the fiber under test may be broken near the measured section.

   Clean the connector terminal surface or use another cable.

   Never apply the index matching oil at the surface.


Cleaning the terminal surface
Cleaning with an applicator
(The MZ8012A Connector cleaning set is
recommended for cleaning the connector.)

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SECTION 2
MECHANICAL CONFIGURATION

2.1 Introduction

This section describes the mechanical structure, the position of the internal units, and the procedures for removing these units to disassemble and reassemble the MW0944B.

Table 2-1 list the mechanical parts. Figures 2-1 to 2-3 shows a disassembled view of the plug-in unit.

2.2 Precautions

Always follow the procedure below before disassembly and reassembly.

Step	Procedure
1	Turn off the MW9040B power switch.
2	Unplug the plug for the AC outlet.
3	Remove the plug-in unit from the MW9040B mainframe.

Failure to follow this safety procedure may cause fire and electrical shock hazards that could result in personal injury.

2.3 Mechanical Parts List

Table 2-1 Mechanical Parts List (1/3) for Figs. 2-1 to 2-3

Parts No.		Description	Remarks	Qty.
①	W3B8109	Cover (3)		1
②	W34B6668C	Frame		1
③	W3B8110	Cover (4)		1
④	——	Connector cap assembly		1
⑤	W4B22374	Cover		1
⑥	W4B22052	Shielding sheet (4)		1
⑦	W4B20614	Plate		2
⑧	W4B20615B	Spring		1
⑨	W4B20614B	Plate		1
⑩	W3H8210	Block		1
⑪	W4B22034	Shielding sheet (3)		1
⑫	W4B20615	Spring		2
⑬	W4B24976	Cord winder		2
⑭	W42N20697	Lock knob		1
⑮	No. 1002	Unit lock		1
⑯	W4B21030	Fitting plate		2
⑰	W43N24975	Rear panel		1
⑱	W43B2202B	Plate		1

Table 2-1 Mechanical Parts List (2/3) for Fig. 2-4

	Parts No.	Description	Remarks	Qty.
㉚	W42H24798	Connector cap		1
㉛	W42B22083	Case (5)		1
㉜	W42B22081	Case (3)		1
㉝	W42B22086	Case (4)		1
㉞	W4B22558	Metal fitting		1
㉟	W4B22088	Plate		2
㊱	ES2B-23	Hinge		1
㊲	No. 1337	Switch, SM134SK		1
㊳	W4Z22612	Clip		1
㊴	44Z79621AF	Spring		1

Table 2-1 Mechanical Parts List (3/3) for Figs. 2-5 to 2-7

	Parts No.	Description	Remarks	Qty.
㊿	W49H17927	Connector		1
㊿①		Connector adaptor	FC connector (standard)	1
㊿②	W4Y22935B	Connector adaptor B	SC connector	
㊿③	W4Y22935C	Connector adaptor C	ST connector	
㊿④	W4Y22935A	Connector adaptor A	DIN connector	
㊿⑤	W4Y22935E	Exchange unit E	D4 connector	
㊿⑥	W4Y22935F	Exchange unit F	Diamond connector (HMS-O)	
㊿⑦	W4B22936	Cover		1

2.4 Cabinet Disassembly (See Figs. 2-1 to 2-8.)

2.4.1 Cover removal

Remove the flat-head screws at the top of the plug-in unit and remove covers ① and ③.

2.4.2 Rear panel removal

Remove three phillips screws on the rear panel.

2.5 Connector Exchange

This paragraph describes how to change the connector adaptor. Refer to Fig. 2-1 through 2-8.

Step	Procedure
1	Remove the flathead screws at the top of the plug-in unit and remove covers ① and ③. (See Fig. 2-1.)
2	Remove the flathead screws at the upper side of the structure of connector cap ④ and the flathead screws at the bottom of the plug-in unit, and then remove the connector cap assembly ④. (See Fig. 2-5.)
3	Remove the three screws of the connector and remove the connector ⑩. (See Fig. 2-5.)
4	Remove the connector adaptor ⑪. (See Fig. 2-5.)
Note:	When you exchange D4 or Diamond Connectors, go to Step 7.
5	Fit the desirable connector adaptor ⑫ ⑬ ⑭ . (See Fig. 2-6.)
6	Fit the connector ⑩ to the plug-in unit. (See Fig. 2-6.)
7	Remove the flathead screws at the connector ⑩ and remove the cover ⑰. (See Fig. 2-7.) Fit the desirable exchange unit ⑮ ⑯ to connector ⑩ instead of connector adaptor ⑯. (See Fig. 2-8.)
8	Fit the exchange unit ⑮ ⑯ to the plug-in unit. (See Fig. 2-8.)
9	Fit the connector cap assembly ④ to the plug-in unit.
10	Fit the cover ① and ③ of Fig. 2-1 to the plug-in unit.

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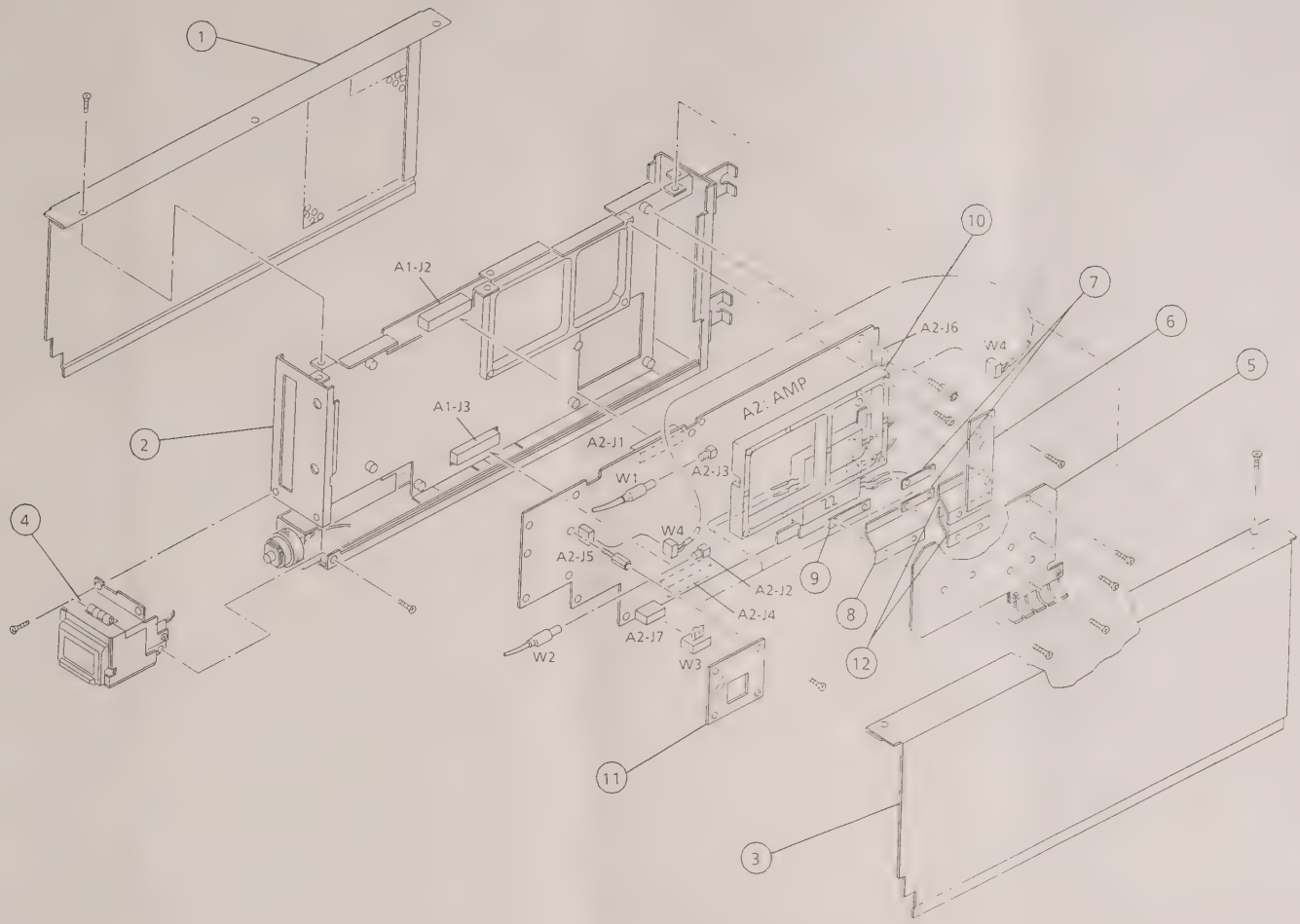

Fig. 2-1 Plug-in Unit Disassembly (1/3)

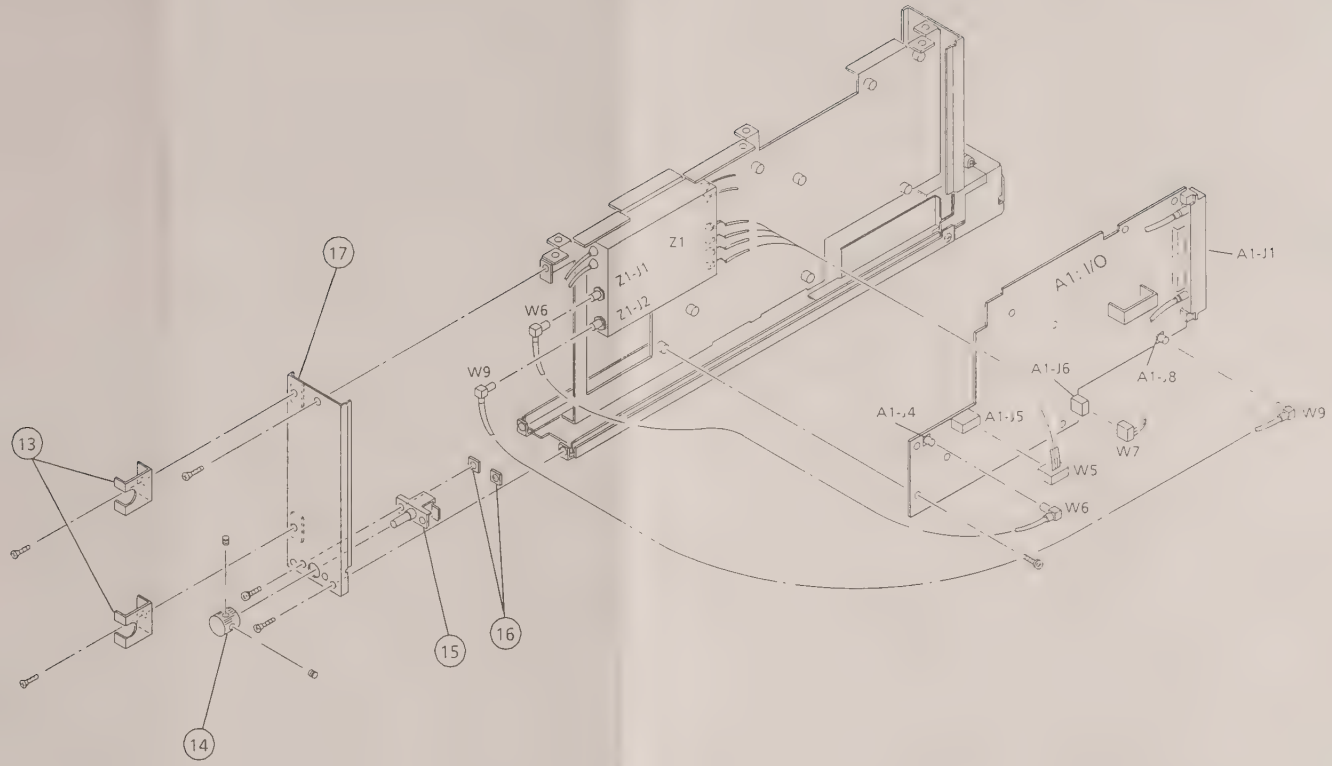

Fig. 2-2 Plug-in Unit Disassembly (2/3)

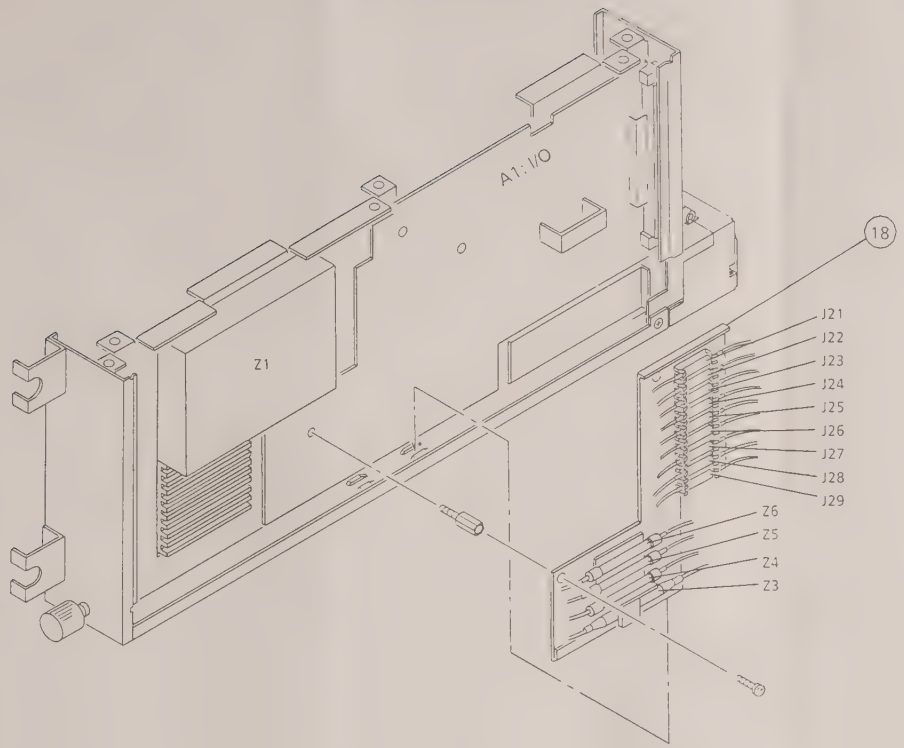

Fig. 2-3 Plug-in Unit Disassembly (3/3)

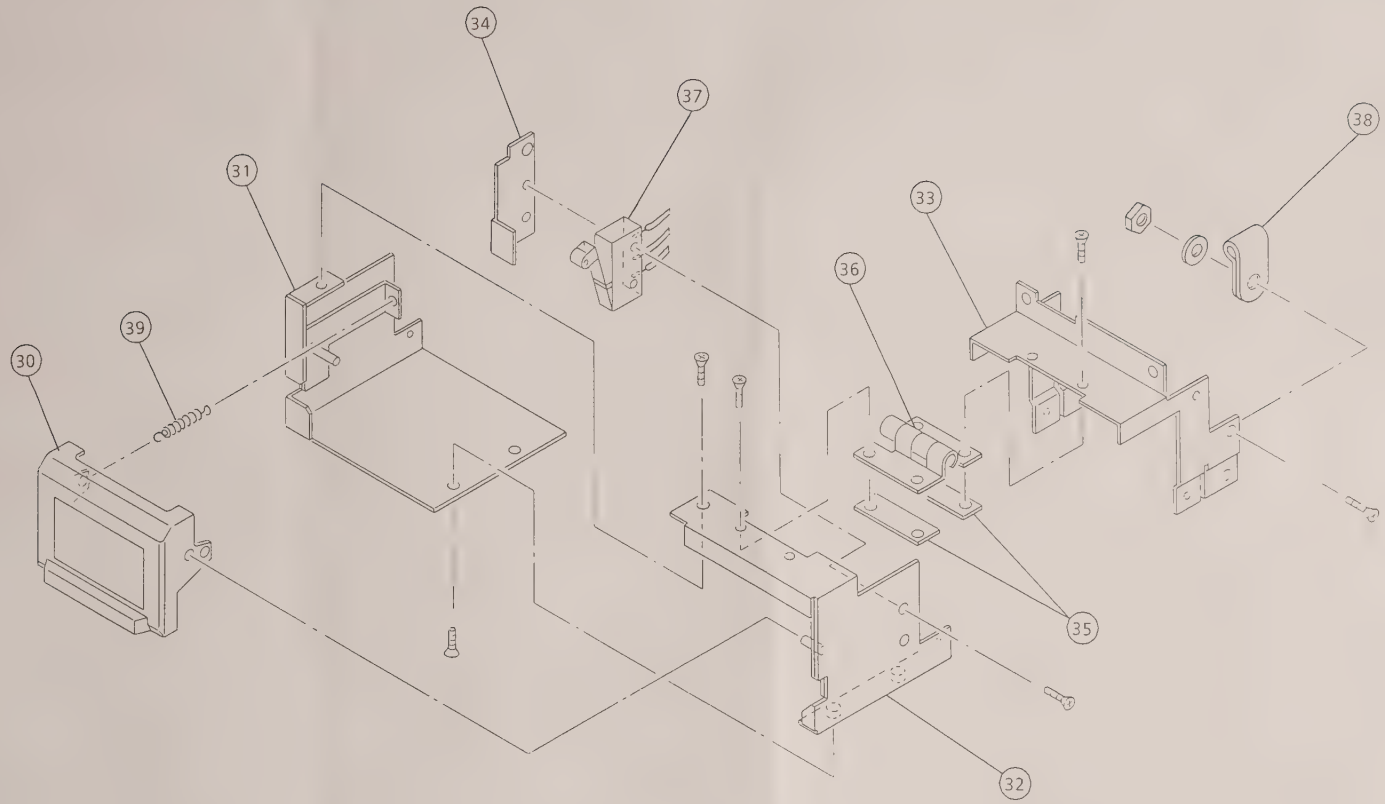

Fig. 2-4 Connector Cap Disassembly

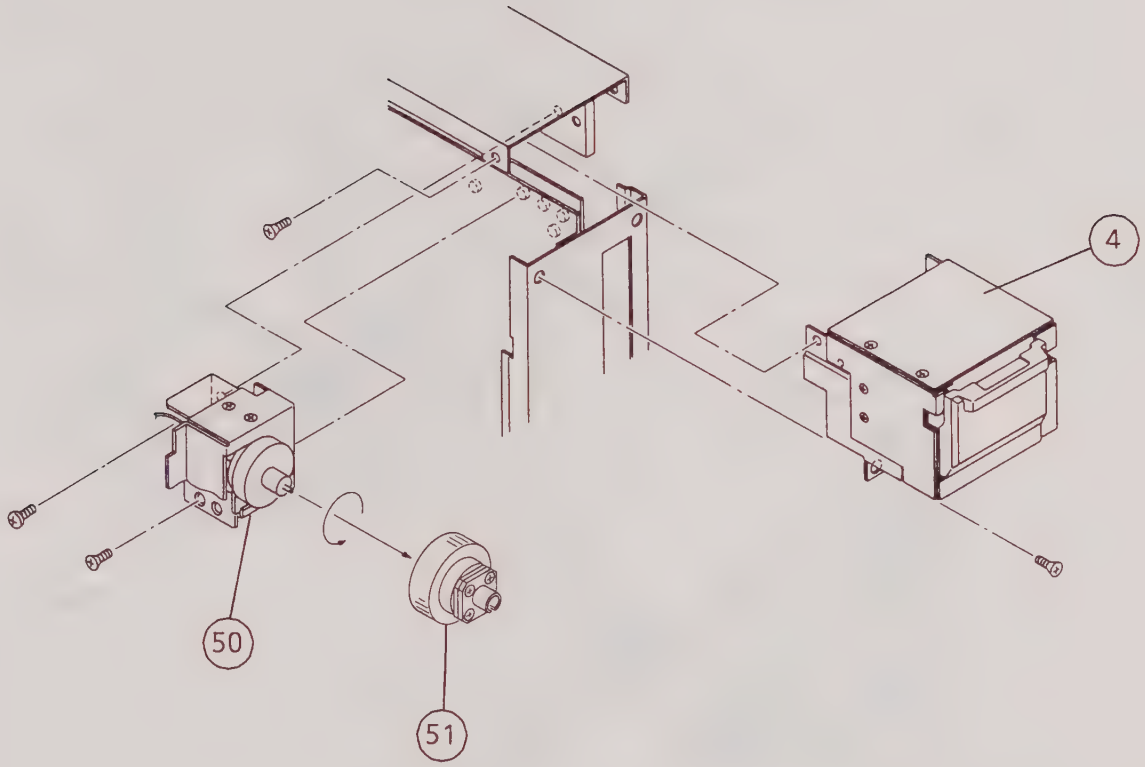

Fig. 2-5 Connector Disassembly (1/2)

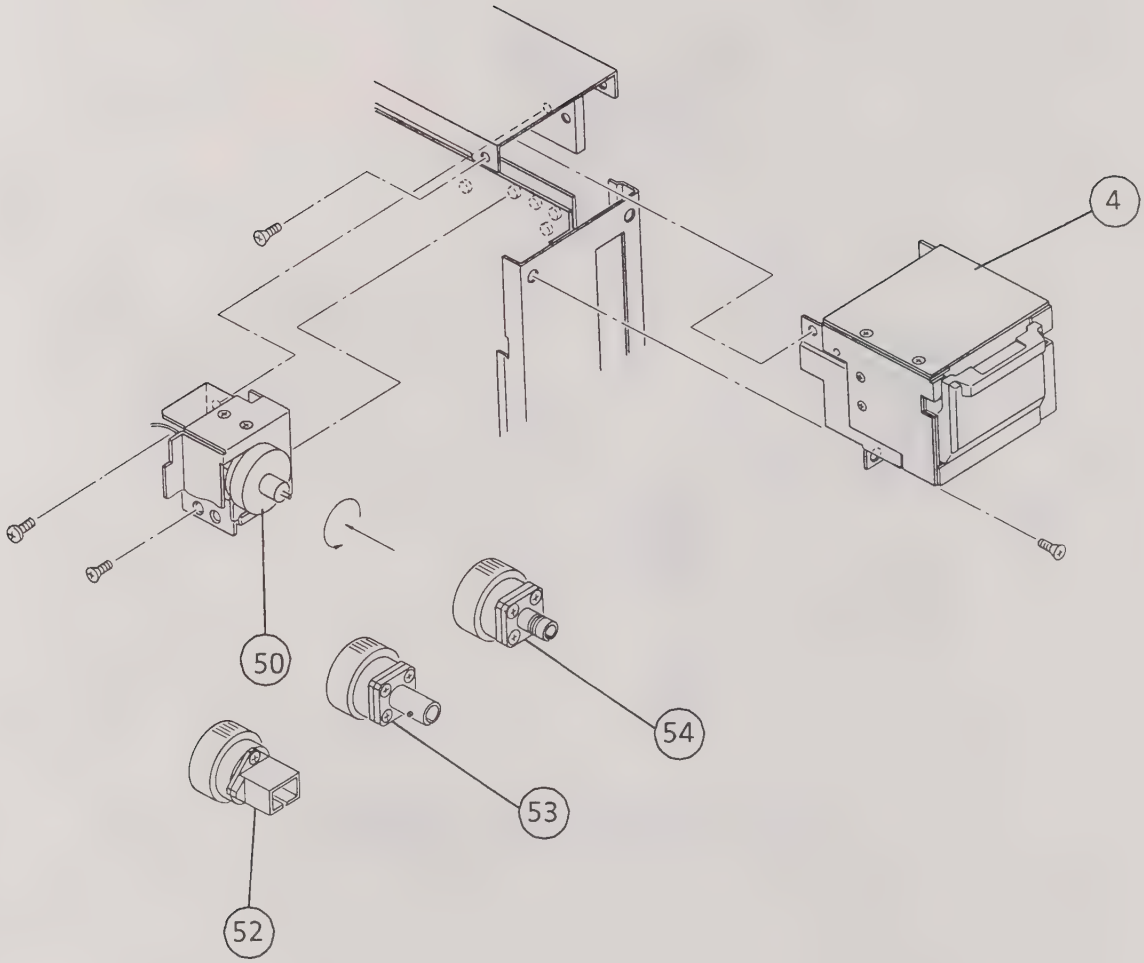

Fig. 2-6 Connector Reassembly (DIN, ST and SC Connectors)

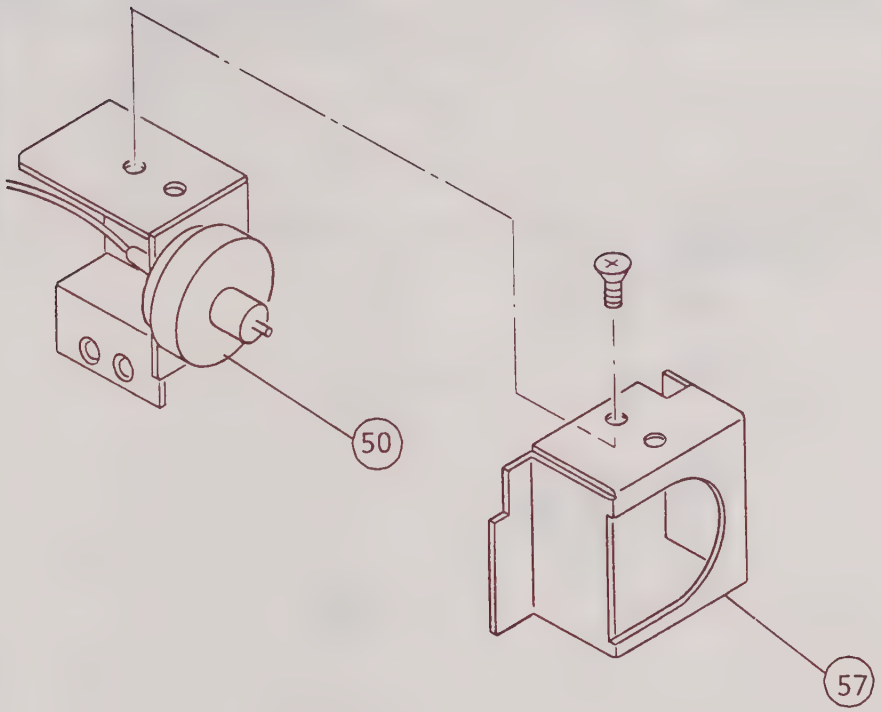

Fig. 2-7 Connector Disassembly (2/2)

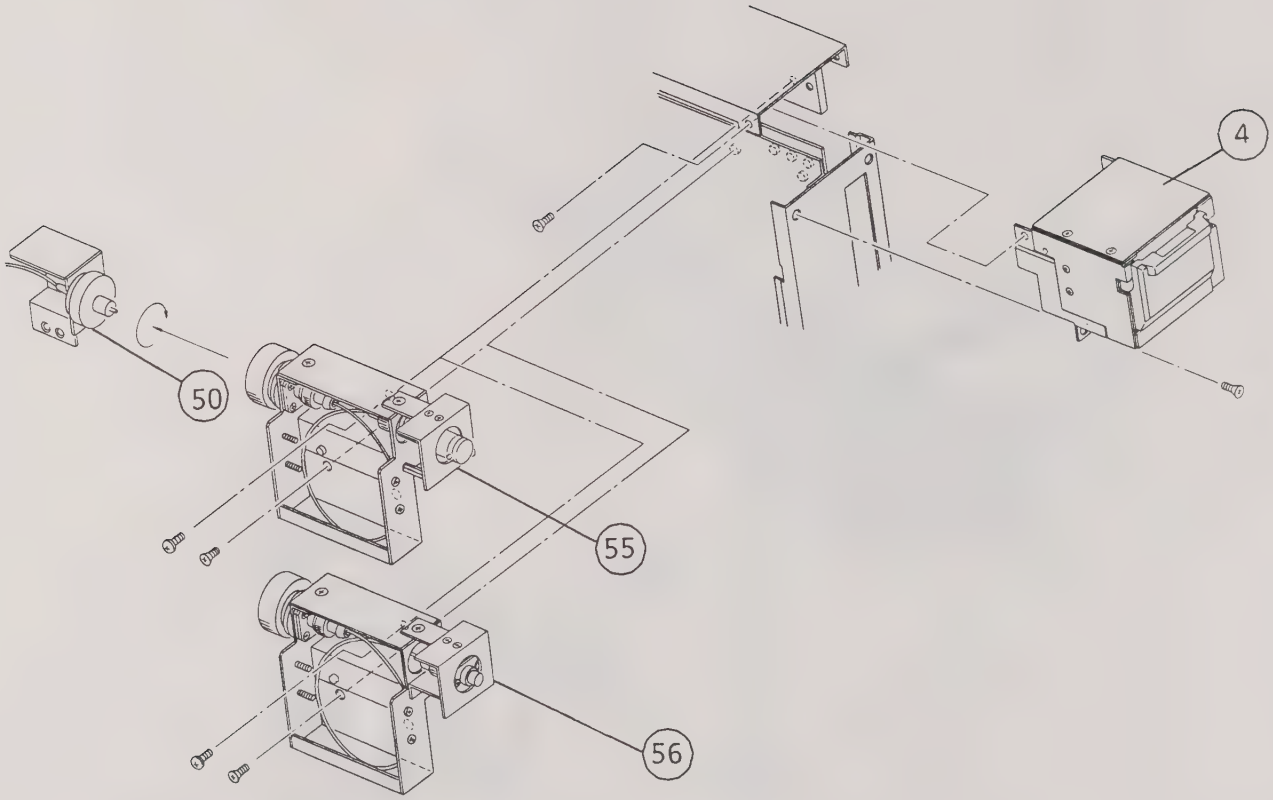

Fig. 2-8 Connector Reassembly (Diamond (HMS-O) and D4 Connecors)

2.6 Circuit Reference

The PC boards of the MW0944B are differentiated by "A" numbers, such as A1, or A2. Table 2-2 lists circuit diagram number, circuit names, A numbers and PC board numbers.

Table 2-2 Circuit Reference

Circuit Diagram No.	Names	A No.	PC Board No.
1	MW0944B plug-in unit overall circuit diagram		
2	I/O	A1	W22U2181
3	AMP	A2	W22U2183

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SECTION 3
TROUBLESHOOTING AND REPAIR

3.1 Introduction

This section describes troubleshooting and repair methods. It also describes test equipment, parts check method, soldering precautions, etc. that are necessary when troubleshooting and repairing.

3.2 Check and Parts Replacement

3.2.1 Identification marks on PC boards

As shown in Fig. 3-1, PC boards have the unit No., PC board No. with the revision No., PC Board Name, part No. and test points with the test point names.

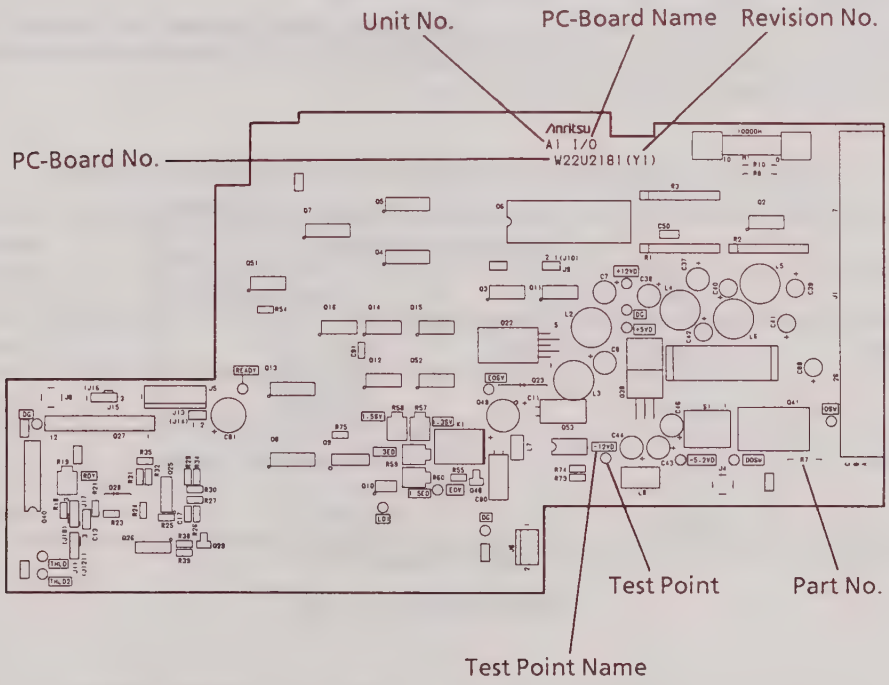


Fig. 3-1 Identification Marks on PC Boards

3.2.2 Notes on soldering and removing components

1. Use an 30- to 40-watt pencil-type insulated soldering iron. If it is not an insulated type, it may damage the part.
2. When removing a soldered component from a PC board or soldering in a new component, nip the component lead with tweezers to shunt heat.
3. Major component lead tips are bent behind the PC board to ensure secure support. To remove the component, first lift up the lead tips and then remove the component.

3.2.3 Transistor and diode checks

(1) Checking transistors mounted on the PC board

Transistors can be checked in the operating state by measuring the base and emitter potentials. In NPN-type silicon transistors, the base potential is 0.6 or 0.7 V higher than the emitter potential. However, the PNP-type silicon transistors have a base potential that is 0.6 or 0.7 V lower than the emitter. Transistors are faulty if these characteristics are not satisfied.

(2) Checking transistors removed from the PC board

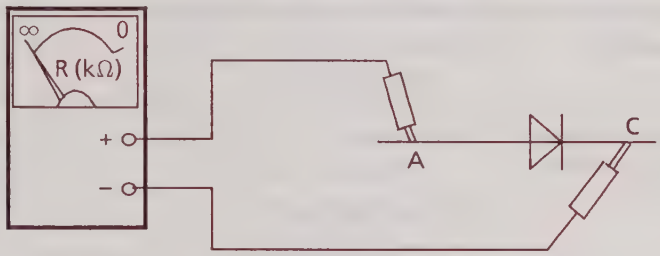
Transistors can be checked by measuring the resistance values between the emitter, base, and collector using an ohmmeter. Reference values are given in Table 3-1. Note that this check should be performed at a measuring current of less than 100 μA.

Table 3-1 Testing Transistors Removed from the PC Board

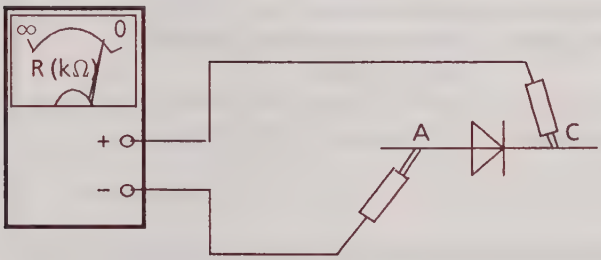
Transistor type	Ohmmeter connection		Resistance (Reference)
	Positive lead	Negative lead	
PNP	Emitter, or Collector	Base	1 to 10 kΩ
	Emitter	Collector	Very high
NPN	Base	Emitter, or Collector	1 to 10 kΩ
	Emitter	Collector	Very high

(3) Checking diodes removed from PC board

Diodes can be checked by measuring the resistance between the A (anode) and C (cathode), and vice versa. If the resistance between A and C is high and the resistance between C and A is low, as shown in Fig. 3-2, the diode is normal.



① Between A and C



② Between C and A

Fig. 3-2 Diode Check

For IS953 as an example, between A (+) and C (−): ∞ between C (+) and A (−): 株 9 kΩ

3.3 Recommended Test Equipment

Table 3-2 lists the recommended test equipment for troubleshooting.

Table 3-2 Recommended Test Equipment

No.	Instrument and device	Required specifications	Remarks
1	Digital multimeter	Measuring voltage range: 0 to ±100 Vdc	
2	Oscilloscope	Frequency range: DC to 300 MHz	
3	Optical power meter with optical sensor	Wavelength: 0.75 to 1.8 μm Measuring range: −55 to 0 dBm	Anritsu ML9001A and MA9712A
4	Optical attenuator	1.3 μm/1.5 μm band Single-mode fiber (PC connector) Maximum attenuation: 65 dB	Anritsu MN9605A
5	Optical fiber cable 1	Single-mode fiber, ≧5 km PC connector	
6	Optical fiber cable 2	Single-mode fiber, 1 to 2 m PC connector	
7	Waveform monitor	Wavelength: 1.0 to 1.6 μm	Anritsu MP96A
8	Ohmmeter		

3.4 Service Kit

For the MW0944B, an extender cable shown in Table 3-3 is available. (W4Y21353)

Table 3-3 Service Kit

No.	Names	Remarks
1	Extender Cable 1	For MW9040B and plug-in unit connection

3.5 Block Diagram and Overall Troubleshooting

Before troubleshooting the plug-in unit, first troubleshoot the MW9040B according to the MW9040B Service Manual.

If the plug-in unit is assumed to be faulty, perform subsequent troubleshooting while it is connected to the MW9040B with the Extender cable 1 (Table 3-3).

3.5.1 Block diagram

Figure 3-3 shows a block diagram of the plug-in unit.

The MW0944B consists of an optical module, EO switch, and two PC boards (A1 I/O and A2 AMP). The optical module is fixed on the PC board of A2 AMP. This optical module contains the LD as an emission block and the APD as a light receiving block.

The power supply, control and timing signals necessary for the plug-in unit are fed from the MW9040B. The plug-in unit is controlled by the A3 MEAS.CPU of the MW9040B.

For the pulse signals from the MW9040B, waveform shaping is effected at the A2 AMP to drive the LD. The optical pulses emitted from the LD are output from the LD OUTPUT terminal through the optical fiber cable extended from the optical module. This optical pulse output enters the test fiber that is presently connected.The backscattering light reflected from the test fiber and the Fresnel reflected light enter the APD through the EO switch. At that time, only the necessary part of the light reflected from the test fiber (distance range) is diffracted and picked up by the EO switch. In this manner, the unwanted portion of the light is not diffracted, and is thus attenuated. For this reason, it is possible to attenuate a very high level signal as the Fresnel reflected light or leakage light during an LD emission, often causing problems in terms of OTDR. As a result, a near-end dead zone or a dead zone after the Fresnel reflection can be reduced. A weak signal received at the APD is amplified at the A2 AMP amplifier and then enters the MW9040B. The A1 I/O is provided with a temperature control circuit for the LD and an I/O port. The A2 AMP contains APD bias voltage control circuit.

Control of the plug-in unit and status supervision are affected at the I/O port of the A1 I/O. The I/O port is used to read out data from ROM where information proper to the plug-in unit is stored, to control the pulse width and wavelength, and to detect an open/close condition of the LD OUTPUT unit.

To prevent the LD wavelength and output power from being affected by variations in ambient temperature, the LD temperature is controlled by a Peltier element. This Peltier element is also used for temperature control in the APD to suppress an increase at high temperature in dark current.

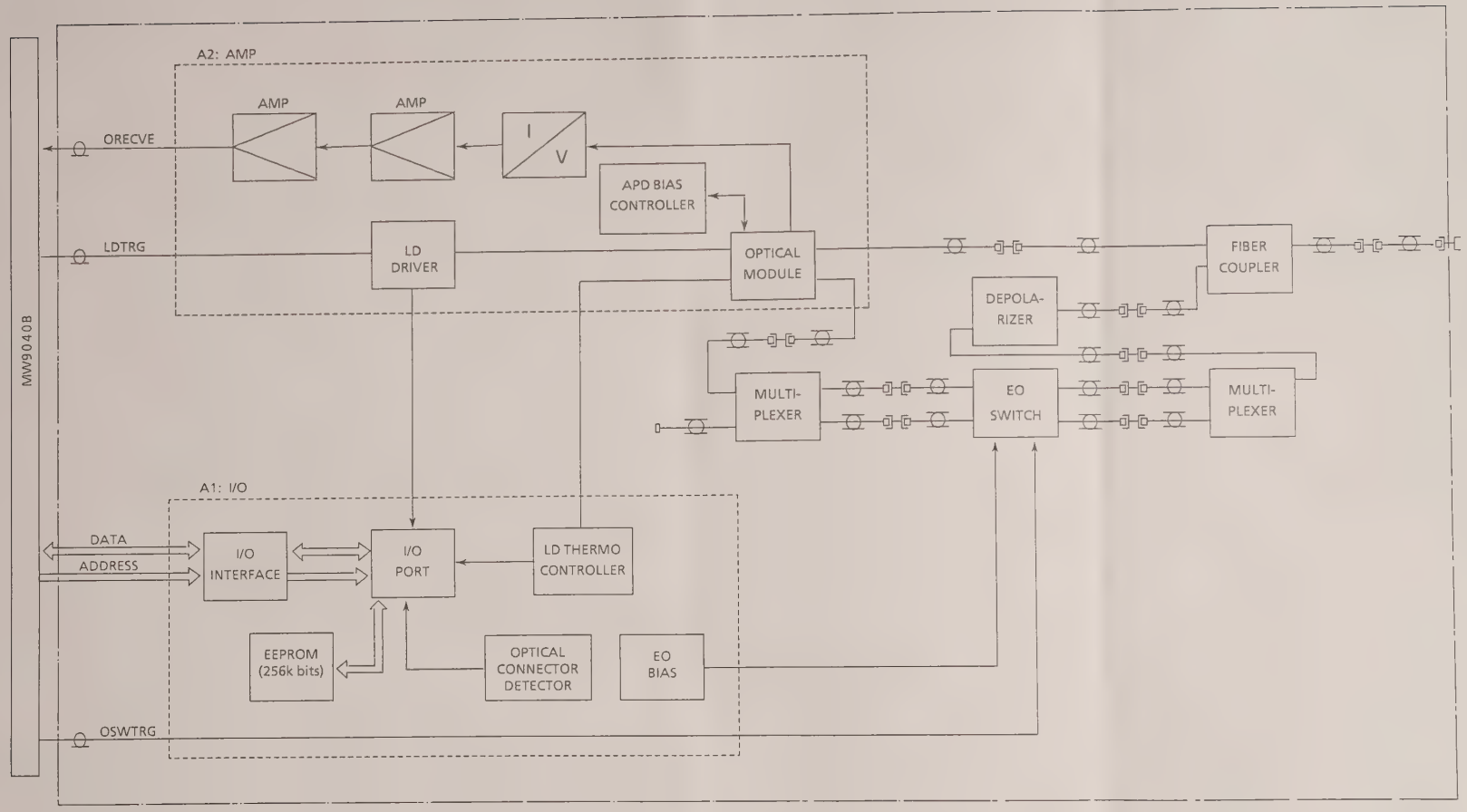
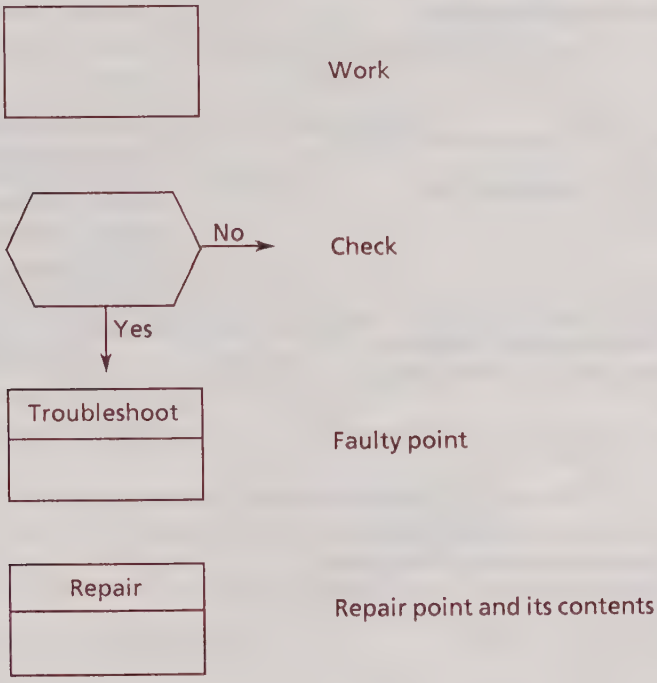


Fig. 3-3 MW0944B Block Diagram

3.5.2 Overall troubleshooting and repair

(1) Flowchart symbols

The flowcharts in the Section 3 use the symbols shown below to explain the troubleshooting procedure.

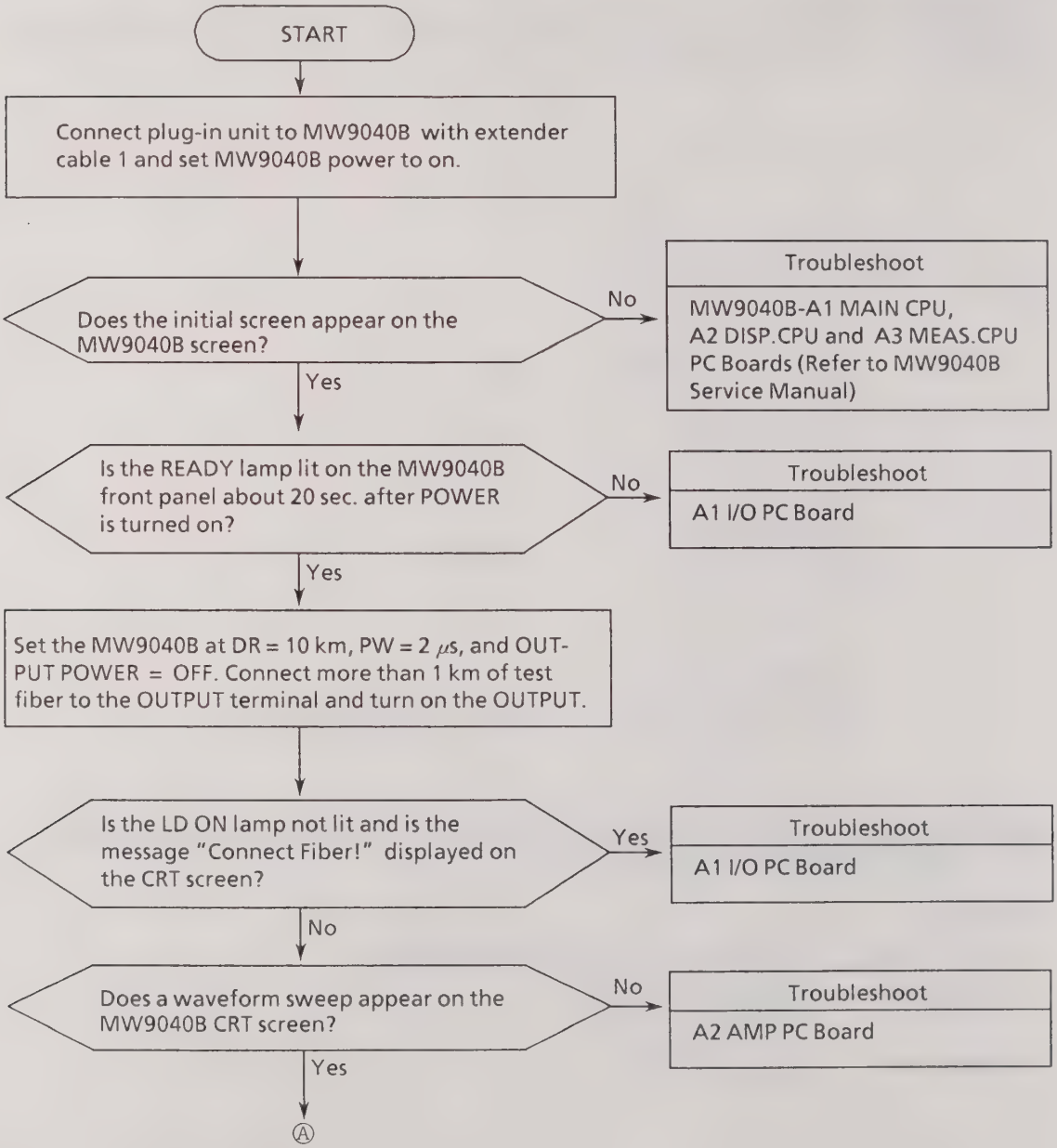


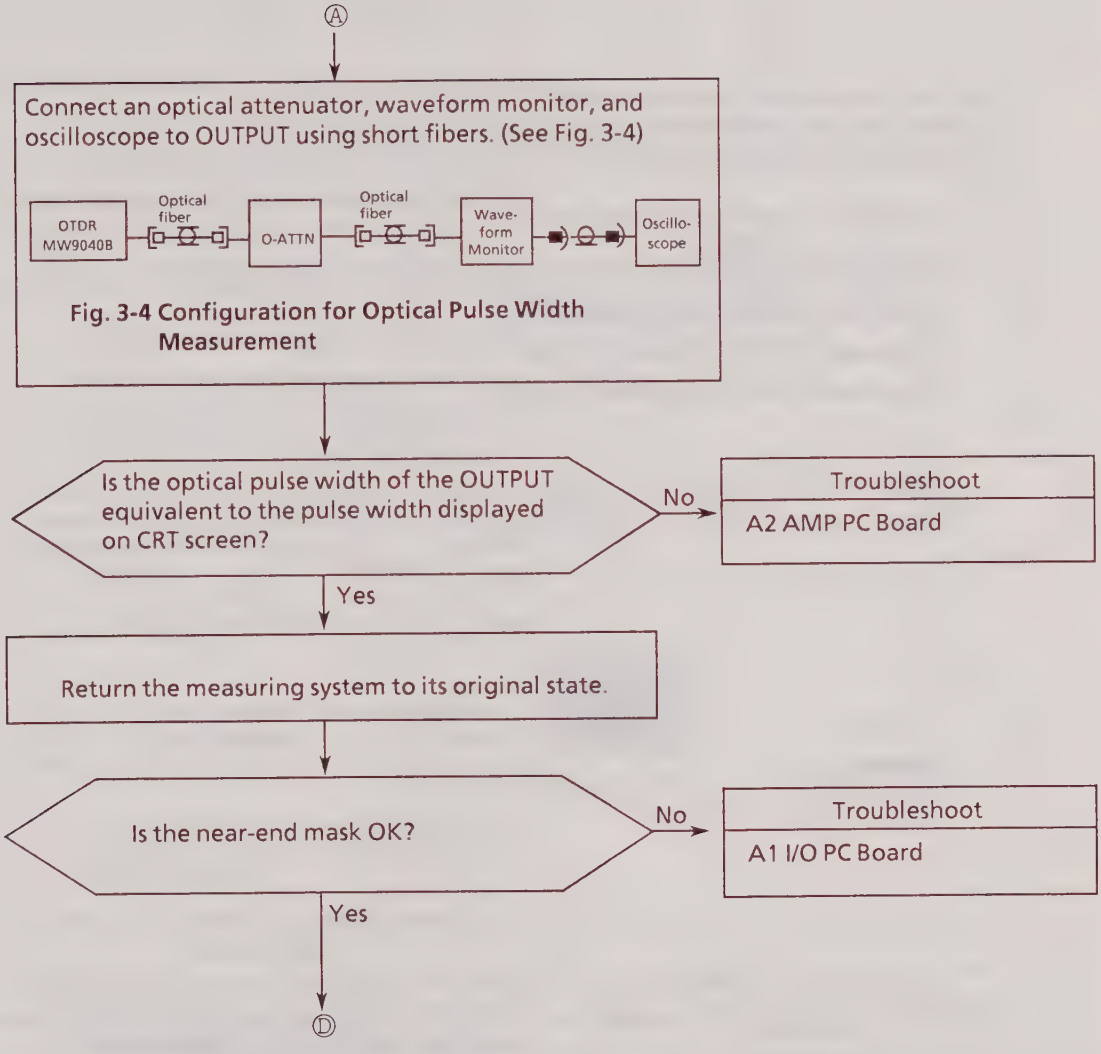
Note: Explanations described below the figures inside the ⟨ ⟩ symbols are setting conditions for the MW9040B and an oscilloscope.

[Example]

DR = 50 km	Distance range 50 km (MW9040B setting)
20 mV/div	Oscilloscope settings (Vertical scale)
50 μs/div	(Horizontal scale)

(2) Main flow of overall troubleshooting


START
Connect plug-in unit to MW9040B with extender cable 1 and set MW9040B power to on.
Does the initial screen appear on the MW9040B screen?
No
Troubleshoot
MW9040B-A1 MAIN CPU, A2 DISP.CPU and A3 MEAS.CPU PC Boards (Refer to MW9040B Service Manual)
Yes
Is the READY lamp lit on the MW9040B front panel about 20 sec. after POWER is turned on?
No
Troubleshoot
A1 I/O PC Board
Yes
Set the MW9040B at DR = 10 km, PW = 2 μs, and OUTPUT POWER = OFF. Connect more than 1 km of test fiber to the OUTPUT terminal and turn on the OUTPUT.
Is the LD ON lamp not lit and is the message "Connect Fiber!" displayed on the CRT screen?
Yes
Troubleshoot
A1 I/O PC Board
No
Does a waveform sweep appear on the MW9040B CRT screen?
No
Troubleshoot
A2 AMP PC Board
Yes
Ⓐ

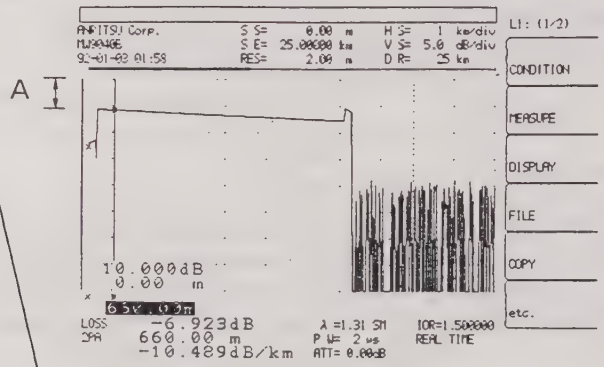

Ⓐ
Connect an optical attenuator, waveform monitor, and oscilloscope to OUTPUT using short fibers. (See Fig. 3-4)
OTDR MW9040B
Optical fiber
O-ATTN
Optical fiber
Wave-form Monitor
Oscillo-scope
Fig. 3-4 Configuration for Optical Pulse Width Measurement
Is the optical pulse width of the OUTPUT equivalent to the pulse width displayed on CRT screen?
No
Troubleshoot
A2 AMP PC Board
Yes
Return the measuring system to its original state.
Is the near-end mask OK?
No
Troubleshoot
A1 I/O PC Board
Yes
Ⓓ

Ⓓ

Is the near-end backscattering light level higher than the value in Table 3-4?

Table 3-4 Near-End Backscattering Light Level

Plug-in unit	Wave-length	Pulse width	A (Typical value)
MW0944B	1.31 μm	2 μs	6 dB
	1.55 μm	2 μs	8 dB



No → Ⓑ

Yes ← Ⓒ

When the wavelength is changed, does the fiber transmission less change?

No → Troubleshoot: A1 I/O PC Board

Yes

END

Ⓑ

Turn the OUTPUT ON/OFF switch to OFF, and disconnect test fiber from the OUTPUT temrinal.

Clean the inside of OUTPUT connector and the surface of test fiber, using alcohol.

Again turn the OUTPUT ON/OFF switch to ON.

Is the near-end backscattering light level higher than the value in Table 3-4?

Yes → Ⓒ

No

Connect an optical power meter to OUTPUT through a short fiber (Fig. 3-5).

Fig. 3-5 Configuration for output power measurement

Is the OUTPUT power higher than the value in Table 3-5?

Table 3-5 Average optical power output level

Plug-in unit	Wave-length	Pulse width	Distance range	P (Typical value)
MW0944B	1.31μm	2μs	10 km	−7.0 dBm
	1.55μm	2μs	10 km	−8.5 dBm

No → Troubleshoot: A1 I/O PC Board

Yes

Troubleshoot: A2 AMP PC Board

3.6 Circuit Description and Troubleshooting for Each PC Board

3.6.1 Introduction

The plug-in unit generates optical pulses by using a laser diode (LD). The optical pulses are supplied to the test fiber. The backscattered light and Fresnel reflection are received through the Electro-optic (EO) switch by the Avalanche Photodiode (APD), which converts the received light to electrical signals.

In Sections 3 and 4, a voltage is represented as the logic level of the TTL, CMOS or ECL. So, refer to the voltage values shown in Table 3-6 below.

Table 3-6 Logic Levels and Voltages

Logic level	TTL	CMOS	ECL
High	$\geqq 2.0$ V	$\geqq 3.15$ V	$\geqq -1.17$ V
Low	$\leqq 0.8$ V	$\leqq 1.3$ V	$\leqq -1.48$ V

3.6.2 A1 I/O PC board 2

(1) Circuit description

This board contains the I/O port used to control the plug-in unit and supervise various conditions. It also contains the temperature control circuit for the LD and the EO bias voltage circuit.

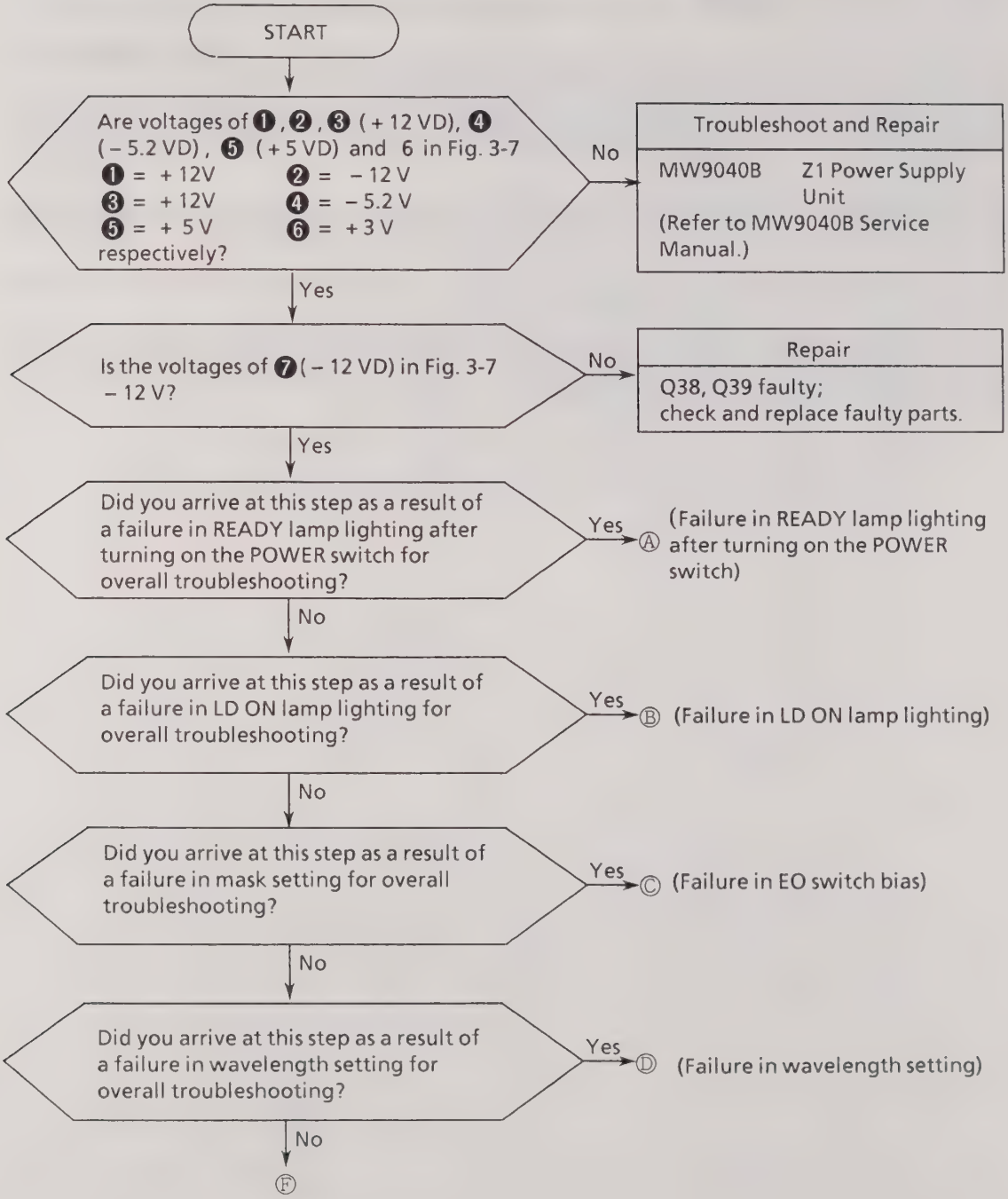
The I/O port comes in address ports Q4 and Q5 of ROM Q6, data port, wavelength and pulse width setting port Q7, OUTPUT POWER setting port Q8, and detecting port Q13 for optical-connnector state and LD-temperature state.

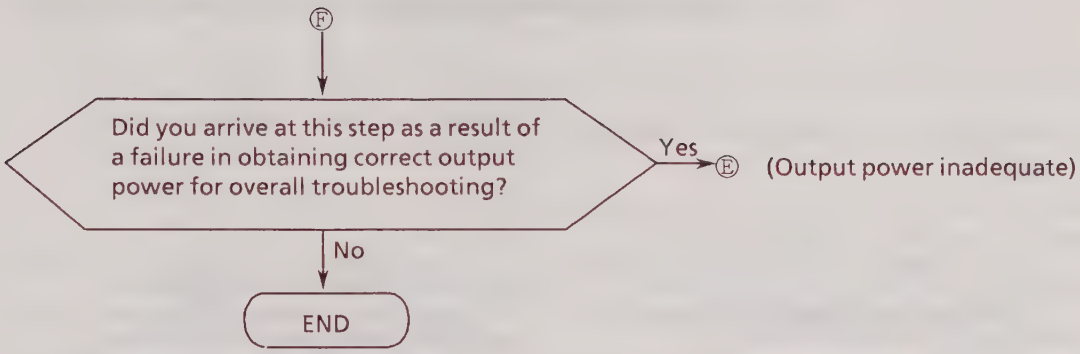
The temperature control circuit of LD applies the LD temperature monitor voltage from the A2 AMP PC board. The voltage is used to even temperatures of the LD with Q25.

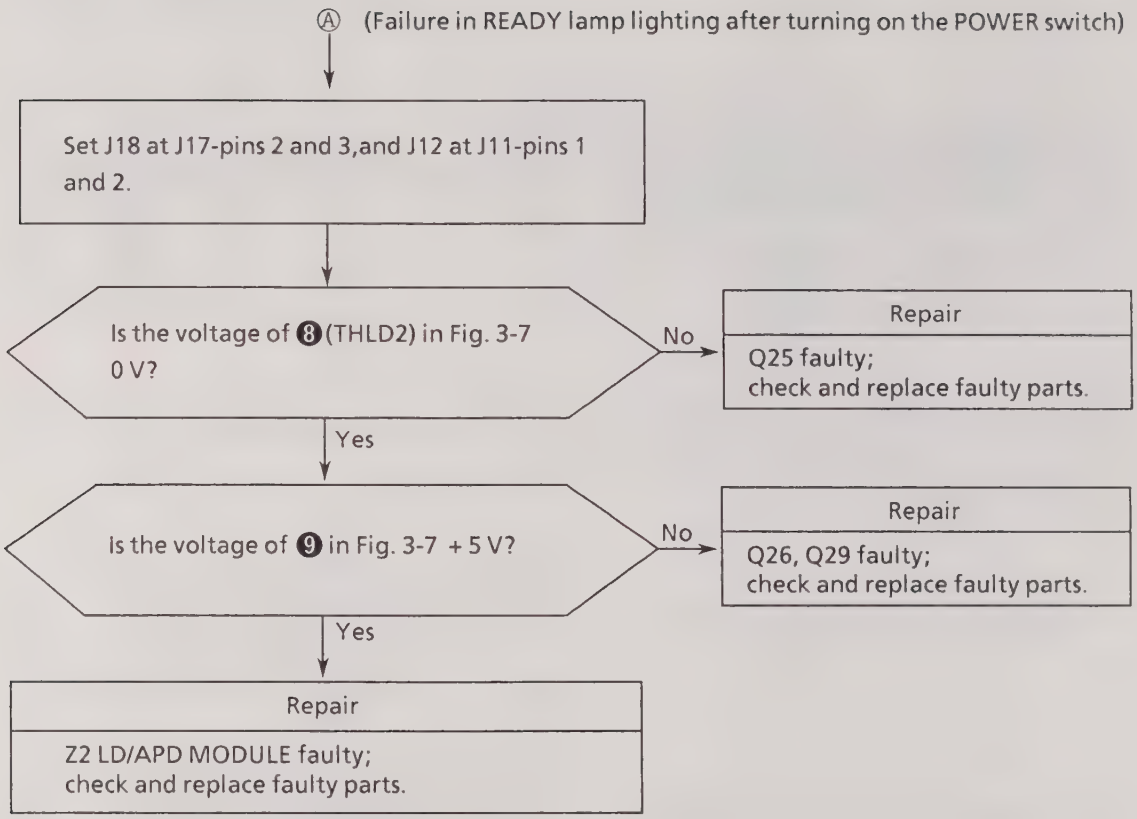
The FET of Q27 drives the Peltier element within the Z2 optical module through J3 to control temperatures at the LD.

The EO bias circuit raises +12 V voltage supplied from the MW9040B by Q22, and adjusts it by Q49 to make the EO bias voltage which is supplied to the EO switch. Since the EO bias voltage differs depending on the wavelength, it is switched by K1.

(2) Troubleshooting and repair


START
Are voltages of ❶, ❷, ❸ (+12 VD), ❹ (−5.2 VD), ❺ (+5 VD) and 6 in Fig. 3-7
❶ = +12V ❷ = −12 V
❸ = +12V ❹ = −5.2 V
❺ = +5 V ❻ = +3 V
respectively?
No
Troubleshoot and Repair
MW9040B Z1 Power Supply Unit
(Refer to MW9040B Service Manual.)
Yes
Is the voltages of ❼ (−12 VD) in Fig. 3-7 −12 V?
No
Repair
Q38, Q39 faulty;
check and replace faulty parts.
Yes
Did you arrive at this step as a result of a failure in READY lamp lighting after turning on the POWER switch for overall troubleshooting?
Yes
Ⓐ (Failure in READY lamp lighting after turning on the POWER switch)
No
Did you arrive at this step as a result of a failure in LD ON lamp lighting for overall troubleshooting?
Yes
Ⓑ (Failure in LD ON lamp lighting)
No
Did you arrive at this step as a result of a failure in mask setting for overall troubleshooting?
Yes
Ⓒ (Failure in EO switch bias)
No
Did you arrive at this step as a result of a failure in wavelength setting for overall troubleshooting?
Yes
Ⓓ (Failure in wavelength setting)
No
Ⓕ


Ⓕ
Did you arrive at this step as a result of a failure in obtaining correct output power for overall troubleshooting?
Yes
Ⓕ
(Output power inadequate)
No
END


Ⓐ (Failure in READY lamp lighting after turning on the POWER switch)
Set J18 at J17-pins 2 and 3,and J12 at J11-pins 1 and 2.
Is the voltage of ❽ (THLD2) in Fig. 3-7 0 V?
No
Repair
Q25 faulty;
check and replace faulty parts.
Yes
Is the voltage of ❾ in Fig. 3-7 + 5 V?
No
Repair
Q26, Q29 faulty;
check and replace faulty parts.
Yes
Repair
Z2 LD/APD MODULE faulty;
check and replace faulty parts.

Ⓑ (Failure in LD ON lamp lighting)

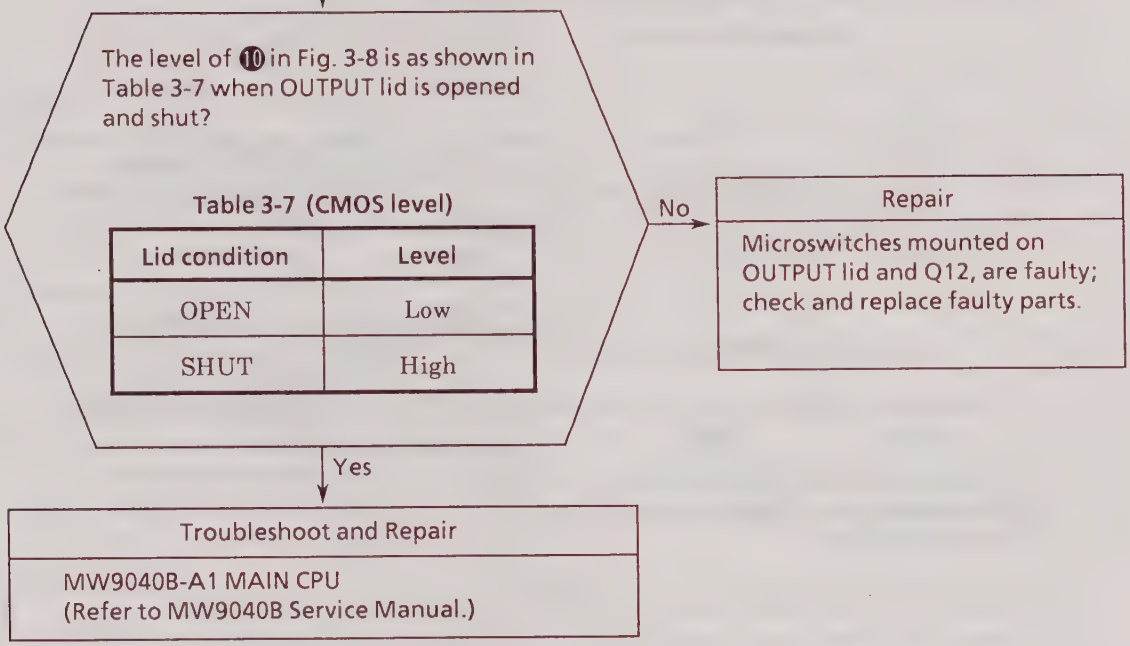

The level of ⑩ in Fig. 3-8 is as shown in Table 3-7 when OUTPUT lid is opened and shut?
No
Repair
Microswitches mounted on OUTPUT lid and Q12, are faulty; check and replace faulty parts.
Yes
Troubleshoot and Repair
MW9040B-A1 MAIN CPU
(Refer to MW9040B Service Manual.)

Table 3-7 (CMOS level)

Lid condition	Level
OPEN	Low
SHUT	High

© (Failure in EO switch bias)

Remove J14 from J13.

Is the voltage of ⓫ (EOSV) >40 V?

No → **Repair**

Q22, Q23, L3 faulty;
check and replace faulty parts.

Yes

Is the voltage of ⓬ (EOV) >40 V?

No → **Repair**

Q49, Q50, L7 faulty;
check and replace faulty parts.

Yes

Is the waveform of ⓭ (OSW) in Fig. 3-7 as shown in Fig. 3-6?

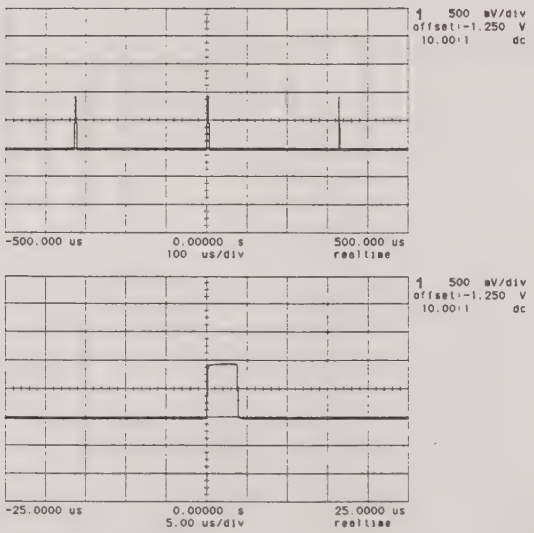


Fig. 3-6 Waveform ⓭

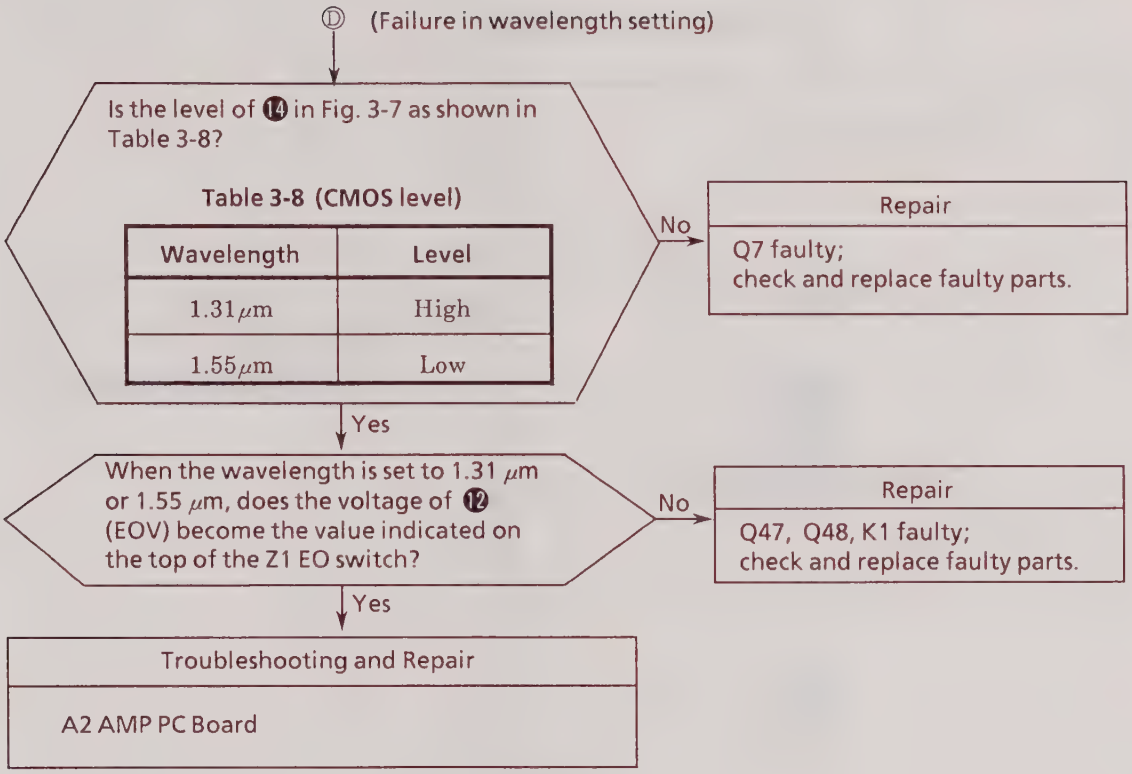
No → **Troubleshoot and Repair**

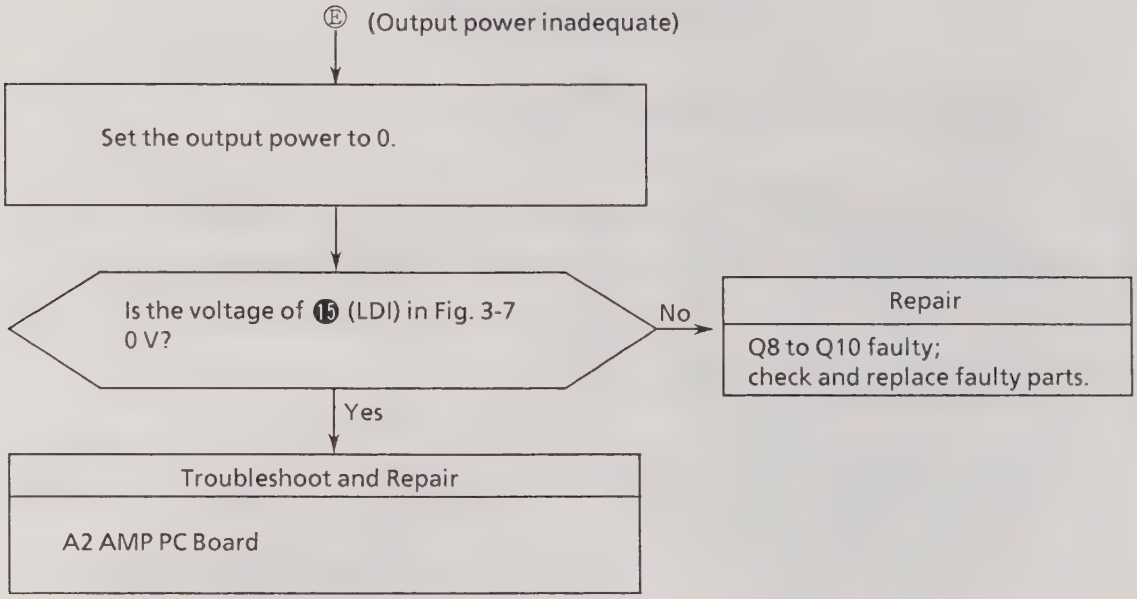
MW9040B-A3 MEAS.CPU PC Board
(Refer to MW9040B Service Manual.)

Yes

Repair

Z1 EO SWITCH faulty;
check and replace faulty parts.


Ⓓ (Failure in wavelength setting)
Is the level of ⓮ in Fig. 3-7 as shown in Table 3-8?
Table 3-8 (CMOS level)
Wavelength
Level
1.31μm
High
1.55μm
Low
No
Repair
Q7 faulty;
check and replace faulty parts.
Yes
When the wavelength is set to 1.31 μm or 1.55 μm, does the voltage of ⓬ (EOV) become the value indicated on the top of the Z1 EO switch?
No
Repair
Q47, Q48, K1 faulty;
check and replace faulty parts.
Yes
Troubleshooting and Repair
A2 AMP PC Board


Ⓔ (Output power inadequate)
Set the output power to 0.
Is the voltage of ⓯ (LDI) in Fig. 3-7 0 V?
No
Repair
Q8 to Q10 faulty; check and replace faulty parts.
Yes
Troubleshoot and Repair
A2 AMP PC Board

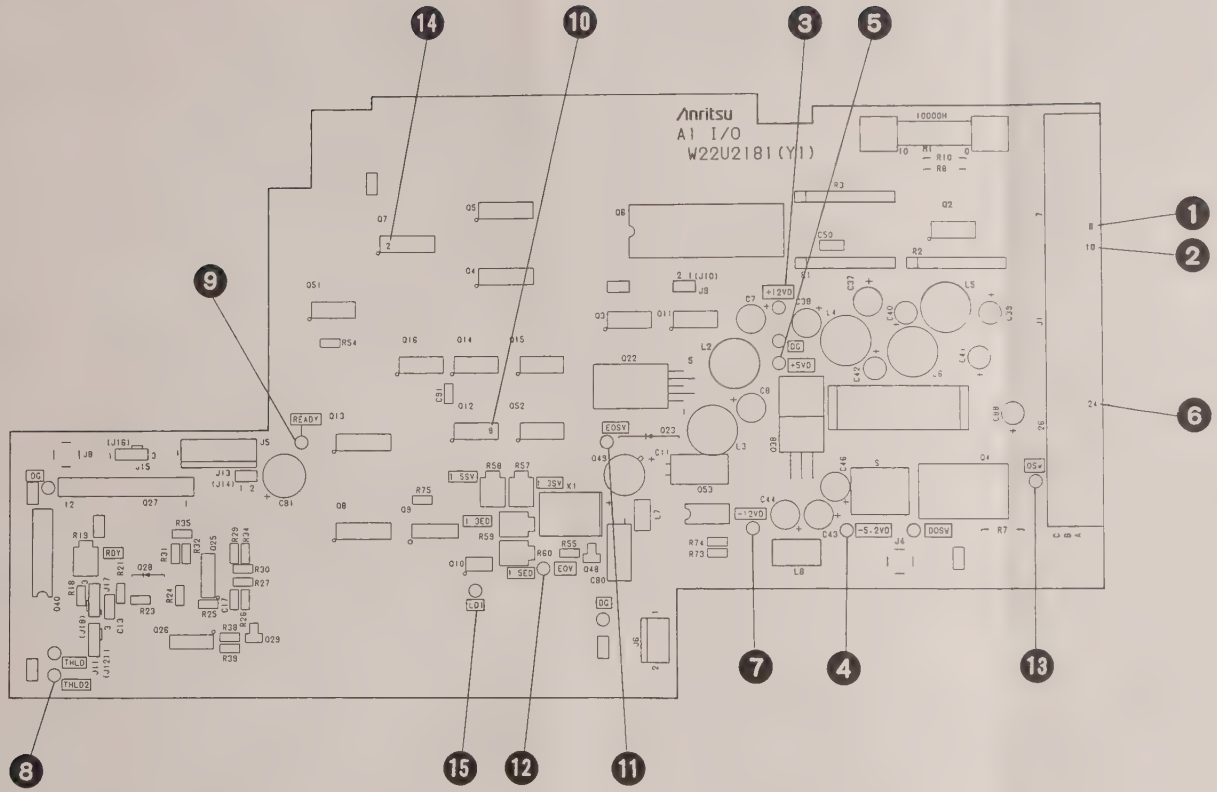


Fig. 3-7 A1 I/O PC Board Component Layout 2

(Blank)

3.6.3 A2 AMP PC board 3

(1) Circuit description

This board incorporates LD drive circuit, a circuit to convert the APD output current into a voltage, a circuit to amplify its weak signal, and an APD bias voltage control circuit.

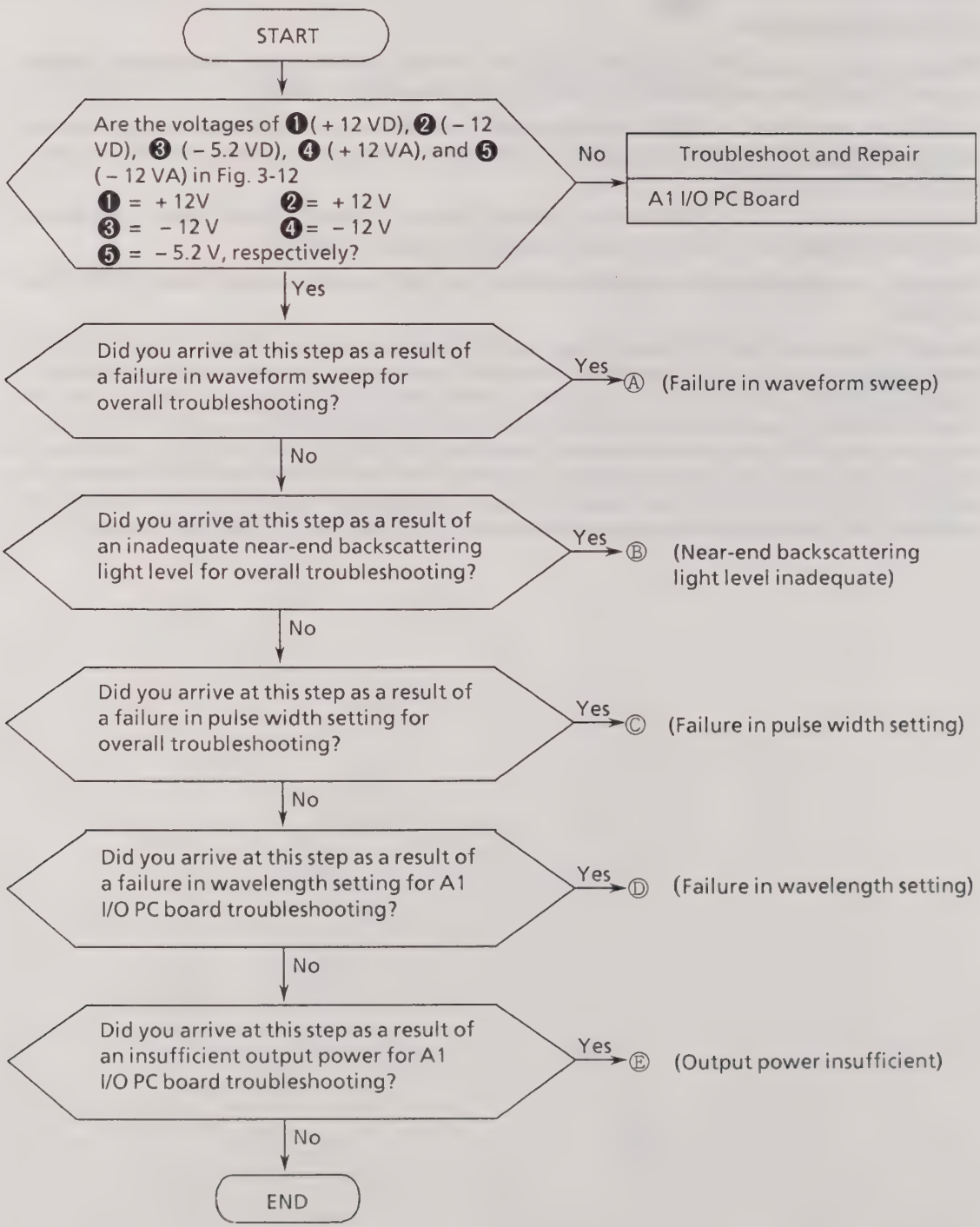
The LD drive circuit receives ECL-level pulse-width signals from the MW9040B via J4 so that the waveform is shaped with Q29. Only a signal component necessary to perform driving the LDs is amplified with Q34 to Q38.

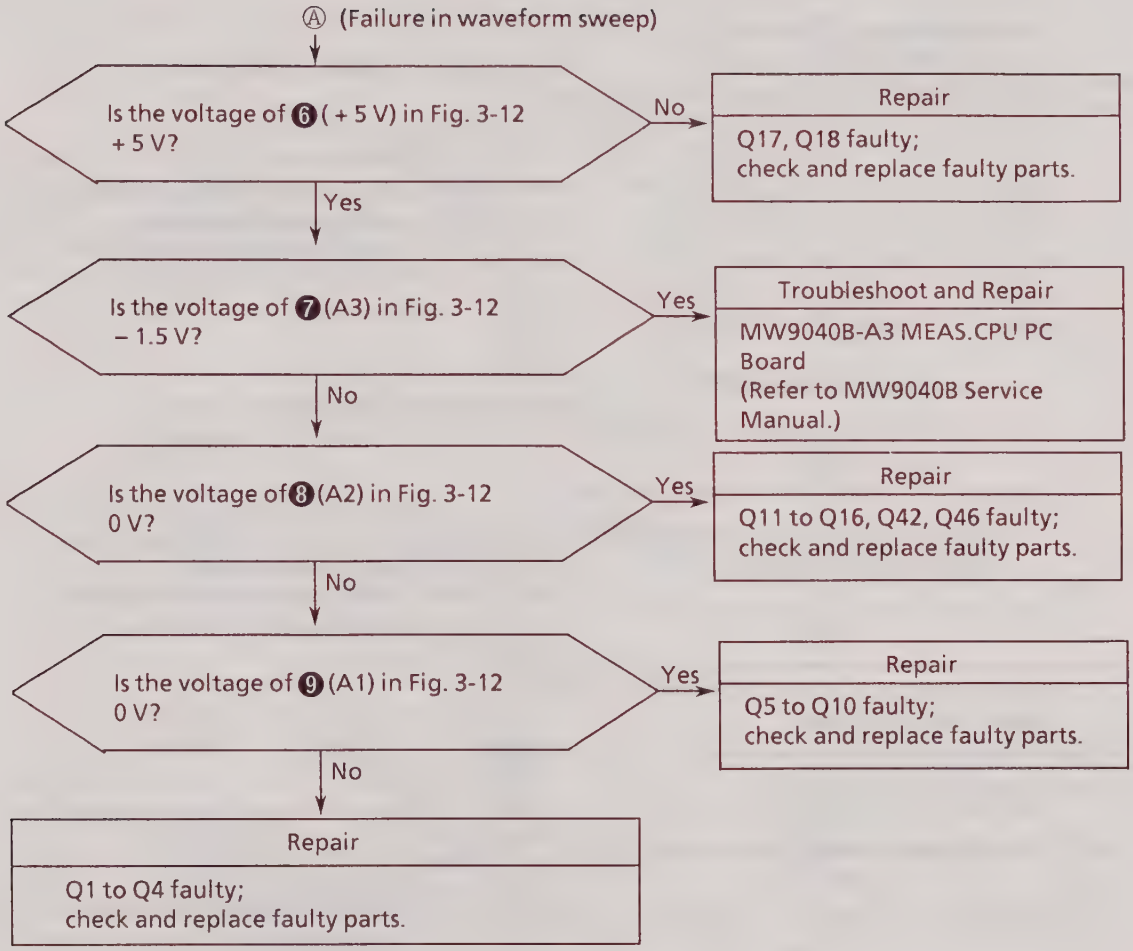
The APD output current is converted into a voltage with Q1. The differential signals pass through the Q2 and Q3 respectively, and are amplified at Q4 differential amplifier.

The output voltage of the Q4 is amplified with Q10 and Q16, and then entered into the MW9040B through J3.

The DC/DC converter for APD bias is composed of transistors Q47 and Q48 and transformer T1. Thus a voltage of 12 V is raised as high as 180 volts. The higher AC voltage is then rectified by the diode bridge Q51 to Q54. Since the amplification factor of the APD can vary with temperature even though the bias voltage is maintained at a constant level, this factor is fixed by controlling the bias voltage on the APD temperature monitor. Therefore, the waveform level on the CRT can be maintained uniform even though ambient temperature varies. Conversion of APD temperature monitor voltage is effected to maintain a constant amplification factor by the OP (operational) amplifier Q20. The APD bias voltage is controlled by the OP amplifier Q20 and the transistor Q19.

(2) Troubleshooting and repair


START
Are the voltages of ❶ (+ 12 VD), ❷ (– 12 VD), ❸ (– 5.2 VD), ❹ (+ 12 VA), and ❺ (– 12 VA) in Fig. 3-12
❶ = + 12V ❷ = + 12 V
❸ = – 12 V ❹ = – 12 V
❺ = – 5.2 V, respectively?
No
Troubleshoot and Repair
A1 I/O PC Board
Yes
Did you arrive at this step as a result of a failure in waveform sweep for overall troubleshooting?
Yes
Ⓐ (Failure in waveform sweep)
No
Did you arrive at this step as a result of an inadequate near-end backscattering light level for overall troubleshooting?
Yes
Ⓑ (Near-end backscattering light level inadequate)
No
Did you arrive at this step as a result of a failure in pulse width setting for overall troubleshooting?
Yes
Ⓒ (Failure in pulse width setting)
No
Did you arrive at this step as a result of a failure in wavelength setting for A1 I/O PC board troubleshooting?
Yes
Ⓓ (Failure in wavelength setting)
No
Did you arrive at this step as a result of an insufficient output power for A1 I/O PC board troubleshooting?
Yes
Ⓔ (Output power insufficient)
No
END


Ⓐ (Failure in waveform sweep)
Is the voltage of ❻ (+ 5 V) in Fig. 3-12 + 5 V?
No
Repair
Q17, Q18 faulty; check and replace faulty parts.
Yes
Is the voltage of ❼ (A3) in Fig. 3-12 – 1.5 V?
Yes
Troubleshoot and Repair
MW9040B-A3 MEAS.CPU PC Board (Refer to MW9040B Service Manual.)
No
Is the voltage of ❽ (A2) in Fig. 3-12 0 V?
Yes
Repair
Q11 to Q16, Q42, Q46 faulty; check and replace faulty parts.
No
Is the voltage of ❾ (A1) in Fig. 3-12 0 V?
Yes
Repair
Q5 to Q10 faulty; check and replace faulty parts.
No
Repair
Q1 to Q4 faulty; check and replace faulty parts.

Ⓑ (Near-end backscattering light level inadequate)

Is the waveform of ⑩ in Fig. 3-12 as shown in Fig. 3-8?

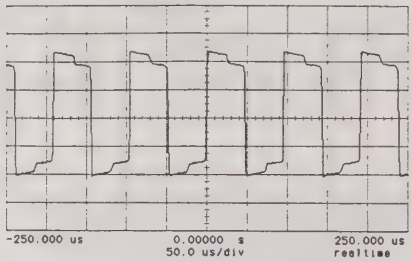


Fig. 3-8 Waveform ⑩

No

Repair
Q47 to Q50, T1 faulty; check and replace faulty parts.

Yes

Is the voltage difference more than 180 V between ⑪ and ⑫ in Fig. 3-12?

No

Repair
Q51 to Q54 faulty; check and replace faulty parts.

Yes

Move the short pins J9 and J14 to J8-pins 1/2 and J13-pins 2/3, respectively.

Is the voltage of ⑬ (THOF) in Fig. 3-12 0 V?

No

Repair
Q20 to Q24 faulty; check and replace faulty parts.

Yes

Is the voltage of ⑭ (APDB) in Fig. 3-12 – 60 V?

No

Repair
Q9 to Q23, Q25 faulty; check and replace faulty parts.

Yes

Repair
Z2 LD/APD MODULE faulty; check and replace faulty parts.

Ⓒ (Failure in pulse width setting)

Is the voltage of ⓯ (– 2 VD) in Fig. 3-12 – 2 V?

No → **Repair**

Q40, Q41 faulty;
check and replace faulty parts.

Yes

Set the MW9040B at shown below.
Dr = 10 km, PW = 2 μs

Is the waveform of ⓰ (NLDTG) in Fig. 3-12 as shown in Fig. 3-9?

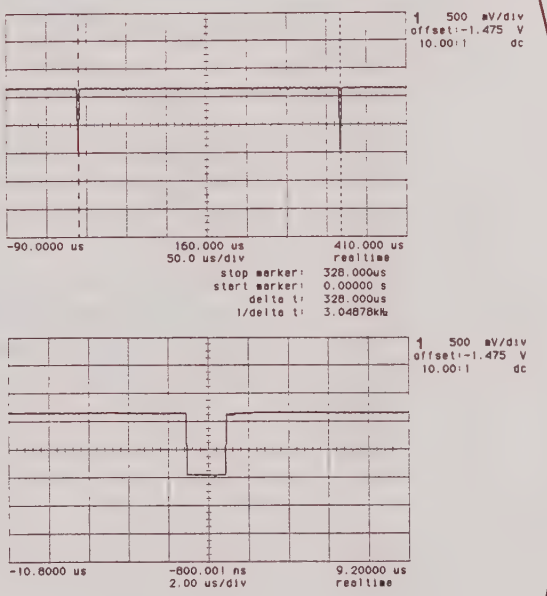


Fig. 3-9 Waveform ⓰

No → **Troubleshoot and Repair**

MW9040B-A3 MEAS-cpu pc Board
(Refer to MW9040B Service manual.)

Yes

Ⓕ

Ⓕ

Are the waveforms of ⑰ (PW) and ⑱ (NPW) in Fig. 3-12 as shown in Fig. 3-10?

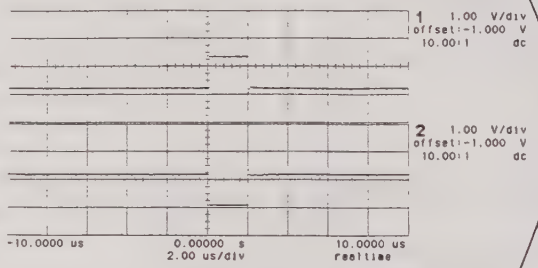


Fig. 3-10 Waveform ⑰ and ⑱

No →

Repair
Q29, Q43 faulty; check and replace faulty parts.

Yes ↓

Ⓔ

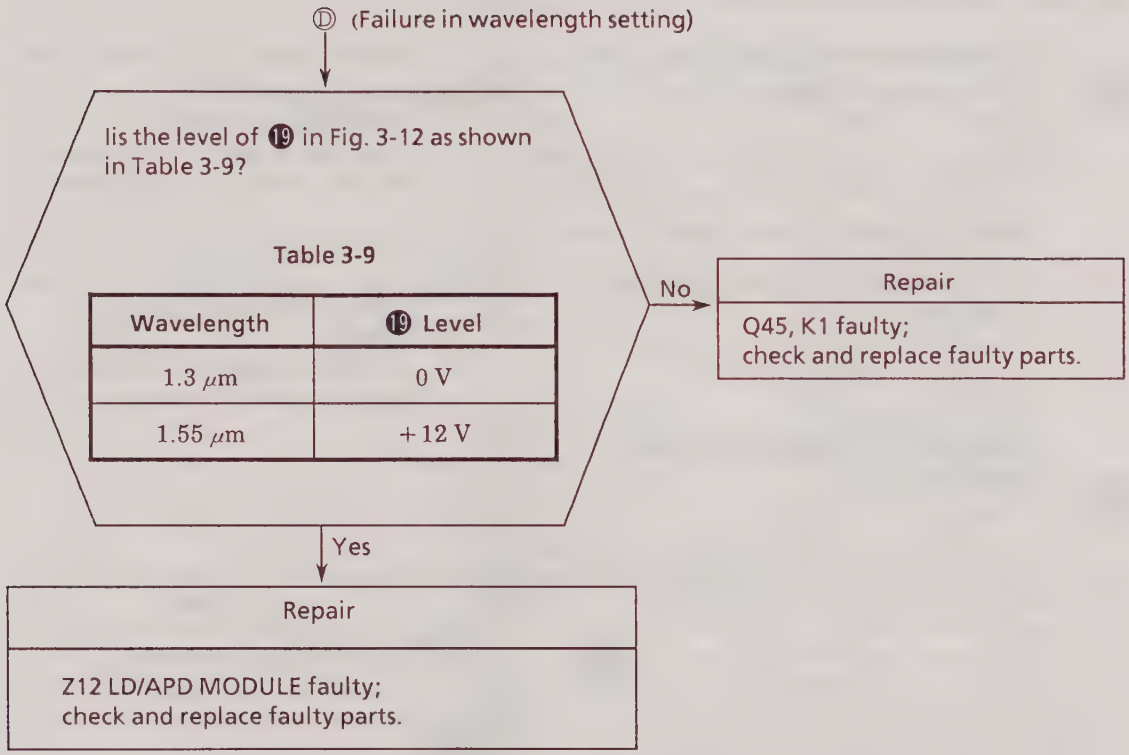


Table 3-9

Wavelength	⓳ Level
1.3 μm	0 V
1.55 μm	+12 V

Ⓔ (Output power inadequate)

With the LD turned off, move the short-pin J11 from pins 1 and 2 of J10 to pins 2 and 3 of J10.

Then set output power = 0 and turn the LD on.

Is the voltage of ⑳ in Fig. 3-12 0 V?

No

Repair
Q59, Q62, Q63 faulty; check and replace faulty parts.

Yes

Is the peak value of ㉑ pulses in Fig. 3-12 about 3 V?

No

Repair
Q31, Q55 to Q58, Q64, Q65 faulty; check and replace faulty parts.

Yes

Is the peak vlaue of ㉒ (LDL) pulse in Fig. 3-12 4.7 V?

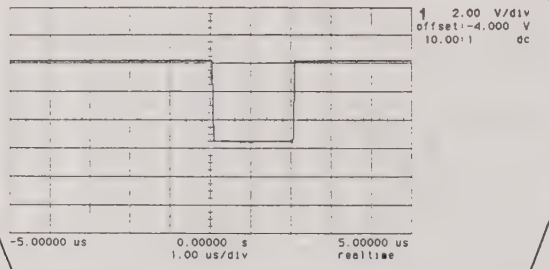


Fig. 3-11 Waveform ㉒

No

Repair
Q34 to Q36, Q38 fualty; check and replace faulty parts.

Yes

Repair
Z2 LD/APD MODULE faulty; check and replace faulty parts.

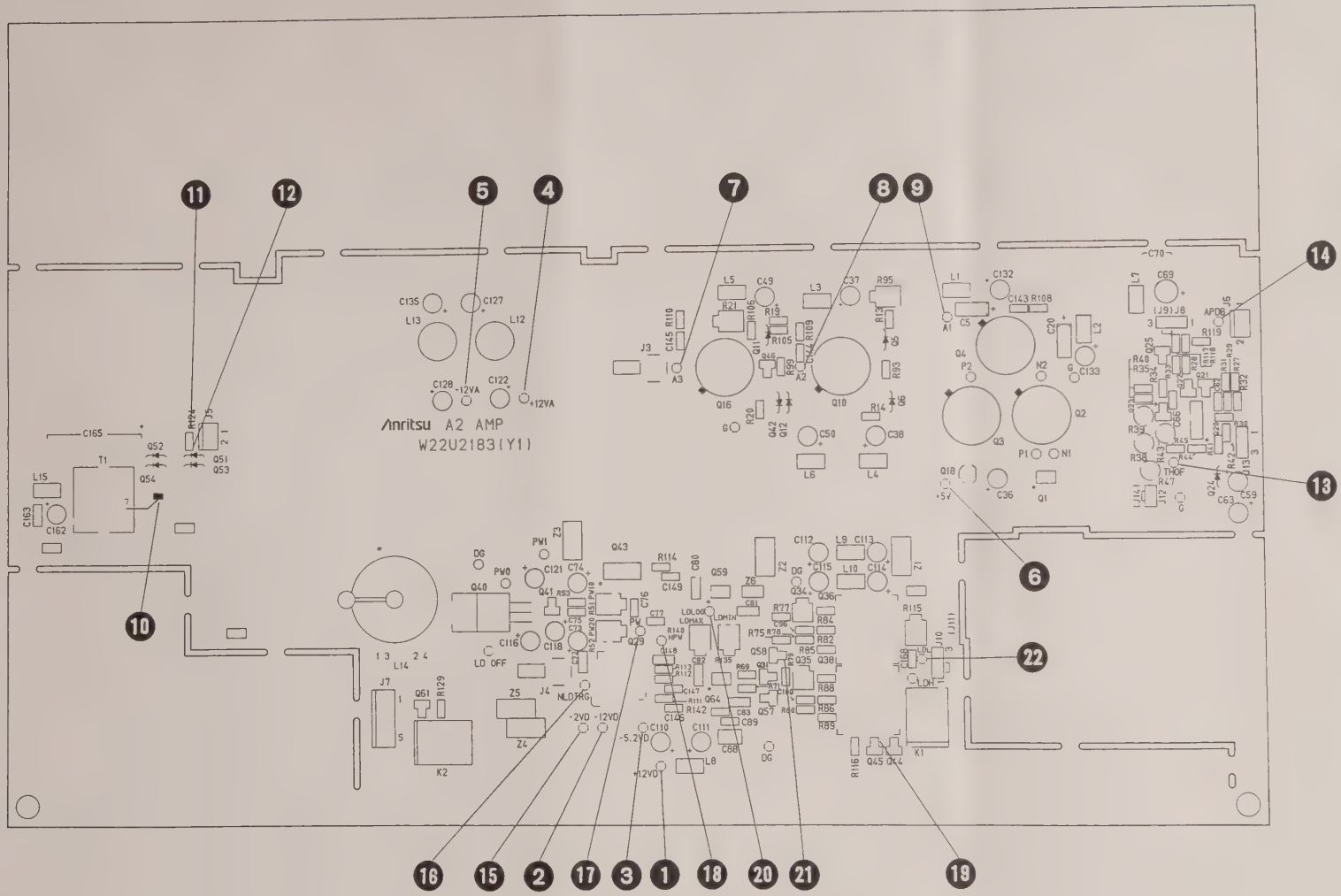


Fig. 3-12 A2 AMP PC Board Component Layout 3

SECTION 4
ADJUSTMENT

4.1 Introduction

this section describes how to adjust the MW0944B plug-in unit.

When making adjustment, use the Extender Cable 1 (Table 3-3) to connect the plug-in unit to the MW9040B.

The plug-in unit adjustment locations and contents are summarized in table 4-1. The equipment used is the same as the "Recommended Test Equipment" in paragraph 3.3.

Table 4-1 Adjustment Locations and Contents

No.	PC board	Adjustment locations	Equipment	Adjustment contents
1	A1 I/O	A1-R19 A1-R57 A1-R59 A1-R58 A1-R60	Digital multimeter	LD temperature control circuit adjustment EO switch bias voltage OUTPUT POWER adjustment
4	A2 AMP	A2-R140 A2-R51 A2-R52 A2-R95 A2-R21 A2-R43 A2-R38 A2-R39 A2-R47 A2-R135	Oscilloscope Optical fiber cable 2 Waveform monitor	LD drive circuit adjustment AMP offset adjustment APD bias voltage adjustment OUTPUT POWER adjustment

4.2 Preparation

Perform the following preparations to protect the optical module from burning.

4.2.1 A1 I/O 2

Move the short pin J12 from J11-pins 2 and 3 to J11-pins 1 and 2.

Move the short pin J18 from J17-pins 1 and 2 to J17-pins 2 and 3.

Remove the short pin J14 from J13.

4.2.2 A2 AMP 3

Move the short pin J9 from J8-pins 2 and 3 to J8-pins 1 and 2.

Move the short pin J14 from J12 to J13-pins 2 and 3.

Turn R38 and R39 fully counterclockwise.

Move the short pin J11 from J10-pins 1 and 2 to J11-pins 2 and 3.

4.3 Adjustments

4.3.1 A1 I/O 2

(1) LD temperature control circuit adjustment

Setup: Turn the power ON.

Step	Procedure
1	Adjust R19 so that the voltage at test pin (THLD2) is 0 V. Confirm that READY lamp on the MW9040B front panel is lit.
2	Turn the power OFF and move the short pin J12 from J11-pins 1 and 2 to J11-pins 2 and 3.
3	Move the short pin J18 from J17 pins 2 and 3 to J17-pins 1 and 2.
4	Turn the power ON. Confirm that READY lamp on the MW9040B front panel is lit.

(2) EO switch bias voltage adjustment

Setup: Set up the MW9040B to Wavelength = 1.31 μm.

Step	Procedure
1	Adjust R57 so that the voltage at the test pin (EOSV) is [(Bias voltage indicated on the EO switch) +2)] V.
2	Adjust R59 so that the voltage at the test pin (EOV) is (Bias voltage indicated on the EO switch) V.
3	Set up the MW9040B to Wavelength = 1.55 μm.
4	Adjust R58 so that the voltage at the test pin (EOSV) is [(Bias voltage indicated on the EO switch) +2)] V.
5	Adjust R60 so that the voltage at the test pin (E0V) is (Bias voltage indicated on the EO switch) V.
6	Connect the short pin J14 to J13.

(3) OUTPUT POWER adjustment

Step	Procedure
1	While setting the OUTPUT POWER to 0 to 128, confirm that the voltage at the test pin (LDI) varies from 0 to 10 V.
2	Set OUTPUT POWER off (OUTPUT POWER = 0).

4.3.2 A2 AMP 3

(1) LD drive circuit adjustment

Setup: Set up the MW9040B as below:

DR = 10 km, PW = 500 ns

Turn the LD on.

Step	Procedure
1	Adjust R140 so that the peak value of LD drive value at the tes tpin (LDL). 4.7 ± 0.2 V.
2	Turn the LD off and move the short pin J11 from J10-pins 2 and 3 to J10-pins 1.
3	Set PW to 10 ns and turn the LD on. While observing the pulse waveform of the LASER OUTPUT signal with the waveform monitor and oscilloscope through a short fiber (1 to 2 m long), adjust R51 so that the pulse width is 10 ns.
4	Set the PW to 20 ns and adjust R52 so that the pulse width is 20 ns in the same may as step 3 above.

(2) AMP offset adjustment

Setup: Turn the LD off.

Step	Procedure
1	Adjust R95 so that the voltage at the test pin (A2) is 0 V.
2	Adjust R21 so that the voltage at the test pin (A3) is −1.5 V.

(3) APD bias voltage adjustment

Step	Procedure
1	Adjust R43 so that the voltage at the test pin (THOF) is 0 V.
2	Turn R38 and R39 clockwise to confirm that the voltage at the test pin (APDB) becomes −80 V.
3	Adjust R38 and R39 so that the voltage at the test pin (APDB) is -60 ± 0.05 V.
4	Move the short pin J14 from J13-pins 2 and 3 to J13-pins 1 and 2.
5	Adjust R47 so that the voltage at the test pin (APDB) is -56.6 ± 0.05 V.
6	Turn R38 and R39 counterclockwise to decrease the voltage at the test pin (APDB).
7	Move the short pin J14 from J13-pins 1 and 2 to J12.
8	After confirming that the voltage at the APDB is less than −20 V, move the short pin J9 from J8-pins 1 and 2 to J8-pins 2 to 3.
9	Turn the LD on, and record the peak-to-peak value (V_{LD}) of the AMP output waveform at J3.
10	Adjust R38 and R39 so that the peak-to-peak value of the AMP output waveform at J3 increases to $30 \times V_{LD}$.

(4) OUTPUT POWER adjustment

Setup: Connect an approx. 1-km optical fiber to the MW0944B.
Turn the LD off.

Step	Procedure
1	Set the OUTPUT POWER to 100.
2	Adjust R135 so that the 4% fresnel reflection disappears.

(Blank)

SECTION 5
REPLACEMENT PARTS

5.1 Introduction

This section contains information for ordering replacement parts or components. The following is a list of abbreviations for circuit components (hereafter referred to by Ref. No.) and abbreviations used for items in the Parts List.

(1) Abbreviations for circuit components

A	Assembly	J	Jack, plug, connector	P	Lamp	T	Trasnformer
AT	Attenuator	K	Relay	Q	Transistor, diode, IC, rectifier	V	Neon lamp, vacuum tube
C	Capacitor	L	Coil, microinductor	R	Resistor	X	Crystal OSC
F	Fuse	M	Meter, timer	S	Switch	Z	Unit

(2) Abbreviations

AC	alternating current	LCD	liquid crystal display
A/D	analog-to-digital	LED	light-emitting diode
ADJ	adjuster	LF	low frequency
AL	aluminum	LPF	low-pass filter
BEF	band-elimination filter	LSI	large scale integrated circuit
BIDIR	bidirectional	MDL	module
BPF	band-pass filter	NI-CD	Nickel Cadmium
CAP	capacitor	OPNL	operational
CER	ceramic	OSC	oscillator
CMOS	complementary metal oxide semiconductor	PDIO	photo diode
CONST	constant	PROM	programmable read only memory
D/A	digital-to-analog	PSU	power supply unit
DC	direct current	PUJT	programmable unijunction transistor
DIP	dual in-line package	RAM	random access memory
DIR	directional	REAC	reactance
DRAM	dynamic random access memory	RECT	rectangular
EEPROM	electrically erasable programmable read only memory	RES	resistor
ELECTLT	electrolytic	RF	radio frequency
EPROM	erasable programmable read only memory	SRAM	static random access memory
FET	field-effect transistor	TA	tantalum
F/V	frequency-to-voltage	VAR	variable
GEN	generator	VARICAP	variable capacitor
HPF	high-pass filter	VCO	voltage controlled oscillator
IC	integrated circuit	YIG	Yttrium Iron Garnet
IF	intermediate frequency		

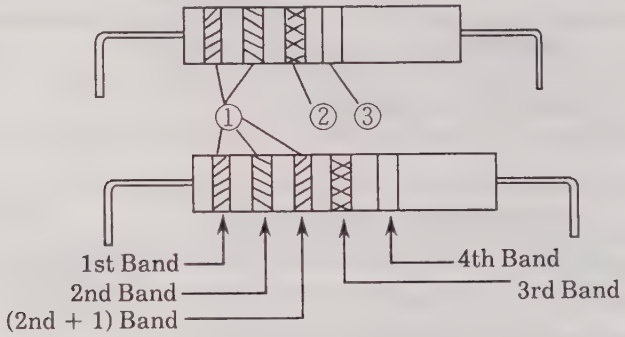
5.2 Electrical Parts Ordering Procedure

When ordering parts, please refer to the parts list and give the following description.

Item	Example
(1) Name of Instrument	MW0944B Plug-in Unit for MW9040B
(2) Name of Parts List	Parts List: A1 I/O BOARD
(3) Ref. No.	C1
(4) Parts Code (or part name)	AL ELECT CAP, CE04C1A101A ***Note:*** Part name is given in the Parts List Description column. When ordering apart or parts with an asterisk, the exact specifications are required.
(5) Quantity	1
(6) Serial No. of Instrument	M31257

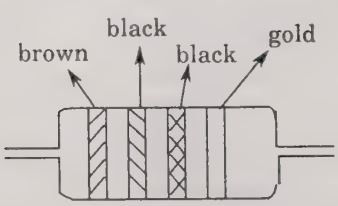
5.3 Reading Capacitance and Resistance

(1) Reading resistance

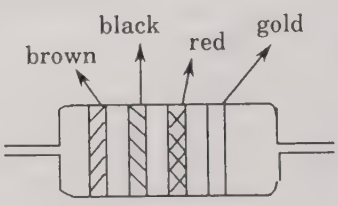


Color	① Figure		② Multiplier	③ Tolerance
	1st	2nd	3rd	4th
Black	0	0	$\times 10^0$	-
Brown	1	1	$\times 10^1$	-
Red	2	2	$\times 10^2$	-
Orange	3	3	$\times 10^3$	-
Yellow	4	4	$\times 10^4$	-
Green	5	5	$\times 10^5$	$\pm 0.5\%$
Blue	6	6	$\times 10^6$	-
Purple	7	7	$\times 10^7$	-
Gray	8	8	$\times 10^8$	-
White	9	9	$\times 10^0$	-
Gold	-	-	$\times 10^{-1}$	$\pm 5\%$
Silver	-	-	$\times 10^{-2}$	$\pm 10\%$
------	-	-		$\pm 20\%$

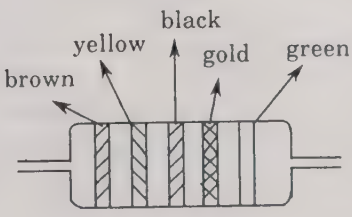
Examples:



$10 \times 10^0 \pm 5\%$
$10\ \Omega, \pm 5\%$



$10 \times 10^2 \pm 5\%$
$1\ k\Omega, \pm 5\%$



$140 \times 10^{-1} \pm 0.5\%$
$14.0\ k\Omega, \pm 5\%$

(2) Reading chip ceramic capacitance

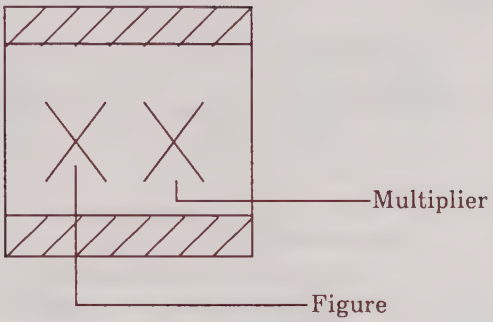
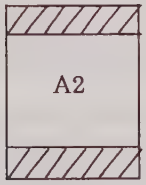


Figure					
Indicated alphabetic character	Corresponding value	Indicated alphabetic character	Corresponding value	Indicated alphabetic character	Corresponding value
A	1.0	M	3.0	Y	8.2
B	1.1	N	3.3	Z	9.1
C	1.2	P	3.6	a	2.5
D	1.3	Q	3.9	b	3.5
E	1.5	R	4.3	d	4.0
F	1.6	S	4.7	e	4.5
G	1.8	T	5.1	f	5.0
H	2.0	U	5.6	m	6.0
J	2.2	V	6.2	n	7.0
K	2.4	W	6.8	t	8.0
L	2.7	X	7.5	y	9.0

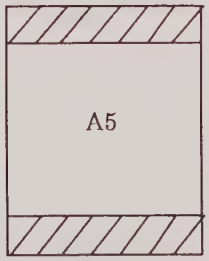
Multiplier	
Indicated value	Corresponding multiplier
0	10^0
1	10^1
2	10^2
3	10^3
4	10^4
5	10^5
6	10^7
7	10^7
8	10^8
9	10^{-1}

Examples:



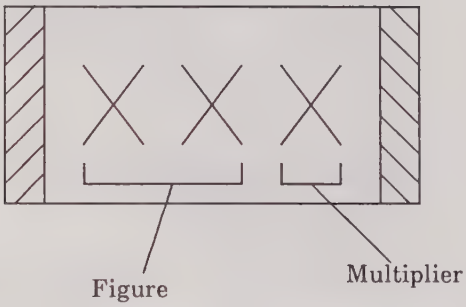
100 pF

8 pF



0.1 μF

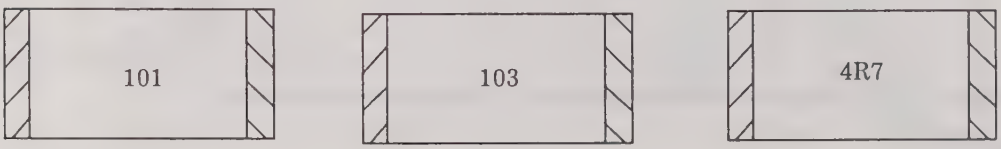
(3) Reading chip resistance



The first two characters are significant digits and the last numeric character indicates the number of zeros following these two characters.

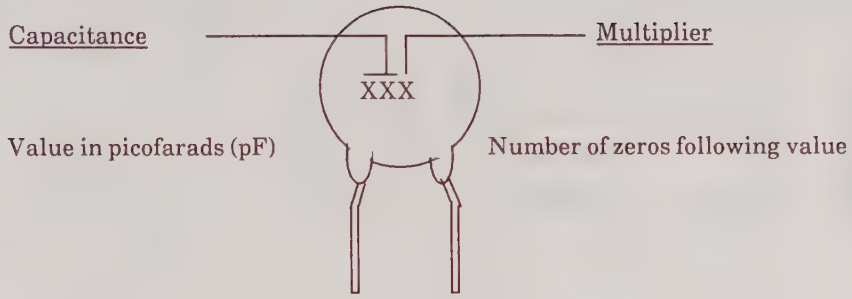
A decimal point is represented by the character R. When the R representation is used, all numeric characters represent significant digits.

Examples:



100 Ω 10 kΩ 4.7 Ω

(4) Reading capacitance



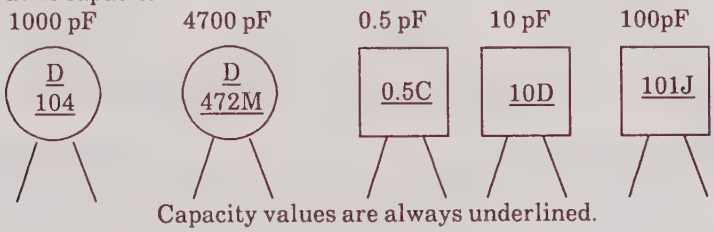
Examples: 103 = 10,000 pF = 10^{-8} F or 0.01 μF
302 = 3,000 pF = 3×10^{-9} F or 0.03 μF
676 = 67,000,000 pF = 67×10^{-6} F or 67 μF

(a) Ceramic and polyester capacitors

Indication	0.5	1	10	101	102	103	104
Capacitance	0.5 pF	1 pF	10 pF	100 pF	1000 pF	0.01 μF	0.1 μF

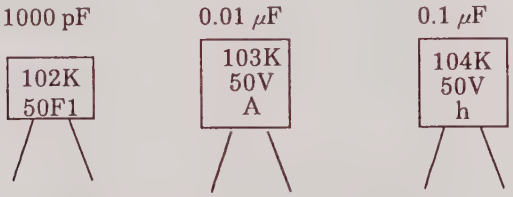
Examples:

Ceramic capacitor



Capacity values are always underlined.

Polyester capacitor

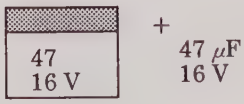


(b) Tantalum, metallized, and electrolytic capacitors

Indication	OR47	010	100	101
Capacitance	0.47 μF	1 μF	10 μF	100 μF

(c) Chip tantalum capacitance

Indication	0.47	4.7	47
Capacitance	0.47 μF	4.7 μF	47 μF



5.4 Parts List

				Page
1	MW0944B Plug-in Unit Overall		(W4W21999)	5-9
2	A1 I/O	MW0944B	(W4W22000)	5-9
3	A2 AMP	MW0944B	(W4W22001)	5-12

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
PLUG-IN UNIT OVERALL

1

Ref. No.	Part Code	Description	Rating	Qty	Note
A 1			W22U2181		
		I/O BOARD		1	W4W22000
A 2			W22U2183		
		AMP		1	W4W22001
J 1		PC FERRULE		1	
J 2		PC-FERRULE		1	
J 3		PC-FERRULE		1	
J 4		PC-FERRULE		1	
J 5		PC-FERRULE		1	
J 6		PC-FERRULE		1	
J 7		PC-FERRULE		1	
J 8		PC-FERRULE		1	
J 9		PC-FERRULE		1	
J 10		NOT ASSIGNED			
J 11		PC-FERRULE		1	
J 12		PC-FERRULE		1	
J 13		PC-FERRULE		1	
J 14		PC-FERRULE		1	
J 15		PC-FERRULE		1	
J 16		PC-FERRULE		1	
J 17		PC-FERRULE		1	
J 18		PC-FERRULE		1	
J 19		PC-FERRULE		1	
J 20		NOT ASSIGNED			

Dep.

* : Selected at factory

DRAWING No W4W21999 1/3

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
PLUG-IN UNIT OVERALL

Ref. No.	Part Code	Description	Rating	Qty	Note
J 21		ADAPTOR		1	
J 22		ADAPTOR		1	
J 23		ADAPTOR		1	
J 24		ADAPTOR		1	
J 25		ADAPTOR		1	
J 26		ADAPTOR		1	
J 27		ADAPTOR		1	
J 28		ADAPTOR		1	
J 29		ADAPTOR		1	
S 1		SWITCH			
		UM10B10F01		1	
S 2		NOT ASSIGNED			
W 1		NOT ASSIGNED			
W 2		NOT ASSIGNED			
W 3		NOT ASSIGNED			
W 4		CABLE			
		W42W22022		1	
W 5		CABLE			
		DF1-5S2.5R24-20B-1		1	
W 6		CABLE			
		27DP-LP-LP		1	
W 7		CABLE			
		DF1-2S2.5R24-32B-1		1	
W 8		NOT ASSIGNED			
W 9		CABLE			
		27DP-LP-LP		1	

Dep.

* : Selected at factory

DRAWING No W4W21999 2/3

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
PLUG-IN UNIT OVERALL

Ref. No.	Part Code	Description	Rating	Qty	Note
Z 1		NO SWITCH			
		OD-S292-90		1	W4Z22020
Z 2		LD/APD MODULE		1	W39B6971C
Z 3		DEPOLARIZER		1	
Z 4		FIBER COUPLER		1	W4Z20644
Z 5		FIBER COUPLER		1	W4Z21329
Z 6		FIBER COUPLER		1	W4Z21329

Dep.

* : Selected at factory

DRAWING No W4W21999 3/3

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

2

Ref. No.	Part Code	Description	Rating	Qty	Note
C 1		NOT ASSIGNED			
C 2		NOT ASSIGNED			
C 3		NOT ASSIGNED			
C 4		NOT ASSIGNED			
C 5		NOT ASSIGNED			
C 6		NOT ASSIGNED			
C 7		AL ELECTLT CAP	100μ F		
		CE04C1E101A	+ 20%,25V	1	
C 8		AL ELECTLT CAP	100μ F		
		CE04C1E101A	+ 20%,25V	1	
C 9		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 10		CER CAP	0.1μ F,100V		
		C3225Y5V2A104Z	+80/-20%	1	
C 11		AL ELECTLT CAP	22μ F		
		CL04C1J220A	+ 20%,63V	1	
C 12		CER CAP	0.1μ F,100V		
		C3225Y5V2A104Z	+80/-20%	1	
C 13		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 14		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 15		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 16		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 17		CER CAP	4700p F		
		CK732B1H472K	± 10%,50V	1	
C 18		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 19		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 20		NOT ASSIGNED			
C 21		NOT ASSIGNED			
C 22		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 23		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	

Dep.

* : Selected at factory

DRAWING No W4W22000 1/12

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
C 24		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 25		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 26		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 27		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 28		NOT ASSIGNED			
C 29		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 30		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 31		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 32		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 33		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 34		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 35		NOT ASSIGNED			
C 36		NOT ASSIGNED			
C 37		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 38		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 39		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 40		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 41		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 42		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 43		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 44		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 45		NOT ASSIGNED			
C 46		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	

* Selected at factory

DRAWING № W4W22000

2/12

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
C 47		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 48		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 49		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 50		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 51		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 52		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 53		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 54		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 55		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 56		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 57		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 58		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 59		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 60		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 61		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 62		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 63		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 64		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 65		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 66		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 67		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 68		NOT ASSIGNED			
C 69		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	

* Selected at factory

DRAWING № W4W22000

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ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
C 70		NOT ASSIGNED			
C 71		NOT ASSIGNED			
C 72		NOT ASSIGNED			
C 73		NOT ASSIGNED			
C 74		NOT ASSIGNED			
C 75		NOT ASSIGNED			
C 76		NOT ASSIGNED			
C 77		NOT ASSIGNED			
C 78		NOT ASSIGNED			
C 79		NOT ASSIGNED			
C 80		AL ELECTLT CAP	10μ F		
		CE04C1H100A	± 20%,50V	1	
C 81		AL ELECTLT CAP	100μ F		
		CE04C1J101A	± 20%,63V	1	
C 82		CER CAP	0.1μ F,100V		
		C3225Y5V2A104Z	+80/-20%	1	
C 83		NOT ASSIGNED			
C 84		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 85		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 86		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 87		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 88		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 89		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 90		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 91		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	

* Selected at factory

DRAWING № W4W22000

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ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
J 1		PLUG	60P		
		PCN10F-60P-2.54DS		1	
J 2		PLUG	26P		
		HIF3FC-26PA-2.54DSA		1	
J 3		PLUG	26P		
		HIF3FC-26PA-2.54DSA		1	
J 4		PLUG			
		27DP-R-PC-1		1	
J 5		PLUG	5P		
		DF1-5P2.5DSA		1	
J 6		PLUG	2P		
		DF1-2P2.5DSA		1	
J 7		NOT ASSIGNED			
J 8		PLUG			
		27DP-R-PC-1		1	
J 9		PLUG	2P		
		FFC-2AMEP		1	
J 10		SOCKET			
		DIC-252		1	
J 11		PLUG	3P		
		FFC-3AMEP		1	
J 12		SOCKET			
		DIC-252		1	
J 13		PLUG	2P		
		FFC-2AMEP		1	
J 14		SOCKET			
		DIC-252		1	
J 15		PLUG	3P		
		FFC-3AMEP		1	
J 16		SOCKET			
		DIC-252		1	
J 17		PLUG	3P		
		FFC-3AMEP		1	
J 18		SOCKET			
		DIC-252		1	
K 1		RELAY	12V		
		ATF203		1	
L 1		NOT ASSIGNED			

* Selected at factory

DRAWING № W4W22000

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ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
L 2		INDUCTOR	470μ H,± 10%		
		TSL1110-471K	460m A	1	
L 3		INDUCTOR	470μ H,± 10%		
		TSL1110-471K	460m A	1	
L 4		INDUCTOR	1000μ H		
		TSL1110-102K	± 10%,310m A	1	
L 5		INDUCTOR	1000μ H		
		TSL1110-102K	± 10%,310m A	1	
L 6		INDUCTOR	1000μ H		
		TSL1110-102K	± 10%,310m A	1	
L 7		INDUCTOR	220μ H,± 10%		
		NL453232-221K		1	
L 8		INDUCTOR	220μ H,± 10%		
		LF8-221K		1	
M 1		NOT ASSIGNED			
Q 1		IC			
		74HC245F		1	
Q 2		IC			
		74HC138F		1	
Q 3		IC			
		74HC14F		1	
Q 4		IC			
		74HC273F		1	
Q 5		IC			
		74HC273F		1	
Q 6		IC			
		HN58C256P-20		1	
Q 7		IC			
		74HC273F		1	
Q 8		IC			
		74HC273F		1	
Q 9		IC			
		NJU8001M		1	
Q 10		IC			
		μ PC1251G2		1	
Q 11		IC			
		74HC32F		1	
Q 12		IC			
		74HC14F		1	

*: Selected at factory

DRAWING № W4W22000 6/12

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
Q 13		IC			
		74HC541F		1	
Q 14		IC			
		74HC74F		1	
Q 15		IC			
		74HC86F		1	
Q 16		IC			
		74HC10F		1	
Q 17		NOT ASSIGNED			
Q 18		NOT ASSIGNED			
Q 19		NOT ASSIGNED			
Q 20		NOT ASSIGNED			
Q 21		NOT ASSIGNED			
Q 22		IC			
		LM2577T-ADJ		1	
Q 23		DIODE			
		RU2		1	
Q 24		NOT ASSIGNED			
Q 25		IC			
		μ PC458G2		1	
Q 26		IC			
		μ PC177G2		1	
Q 27		TRANSISTOR			
		FT8022		1	
Q 28		ZENER DIODE			
		1SZ52		1	
Q 29		DIODE			
		A1SS123		1	
Q 30		NOT ASSIGNED			
Q 31		NOT ASSIGNED			
Q 32		NOT ASSIGNED			
Q 33		NOT ASSIGNED			
Q 34		NOT ASSIGNED			
Q 35		NOT ASSIGNED			

*: Selected at factory

DRAWING № W4W22000 7/12

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
Q 36		NOT ASSIGNED			
Q 37		NOT ASSIGNED			
Q 38		IC			
		μ PC16312HF		1	
Q 39		DIODE			
		A1S2836		1	
Q 40		IC			
		PS2403-4		1	
Q 41		IC			
		EPD14NH		1	
Q 42		DIODE			
		A1S2836		1	
Q 43		NOT ASSIGNED			
Q 44		NOT ASSIGNED			
Q 45		NOT ASSIGNED			
Q 46		NOT ASSIGNED			
Q 47		DIODE			
		A1S2836		1	
Q 48		TRANSISTOR			
		2SC1623		1	
Q 49		IC			
		LM317HVH		1	
Q 50		DIODE			
		A1SS123		1	
Q 51		IC			
		74HC32F		1	
Q 52		IC			
		74HC74F		1	
Q 53		IC			
		MAX690EPA		1	
R 1		RES ARRAY	47KΩ		
		RRS-8-473JA	± 5%	1	
R 2		RES ARRAY	47KΩ		
		RRS-8-473JA	± 5%	1	
R 3		RES ARRAY	47KΩ		
		RRS-8-473JA	± 5%	1	
R 4		CERMET RESISTOR	4.7KΩ		
		RK73M2A472J	± 5%,1/10W	1	

*: Selected at factory

DRAWING № W4W22000 8/12

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
R 5		CERMET RESISTOR	47KΩ		
		RK73M2A473J	± 5%,1/10W	1	
R 6		CERMET RESISTOR	150Ω		
		RK73M2A151J	± 5%,1/10W	1	
R 7		CARBON FILM RES	150Ω		
		AKD25T151J	± 5%,1/4W	1	
R 8		NOT ASSIGNED			
R 9		NOT ASSIGNED			
R 10		NOT ASSIGNED			
R 11		NOT ASSIGNED			
R 12		NOT ASSIGNED			
R 13		NOT ASSIGNED			
R 14		NOT ASSIGNED			
R 15		NOT ASSIGNED			
R 16		METAL FILM RESISTOR	91KΩ		
		RN73G2A913D	± 0.5%,1/10W	1	
R 17		METAL FILM RESISTOR	2KΩ		
		RN73G2A202D	± 0.5%,1/10W	1	
R 18		CERMET RESISTOR	600Ω		
		RK73M2A601J	± 5%,1/10W	1	
R 19		VARIABLE RESISTOR	500Ω		
		RGS4H501	1/4W	1	
R 20		CERMET RESISTOR	15KΩ		
		RK73M2A153J	± 5%,1/10W	1	
R 21		METAL FILM RESISTOR	91KΩ		
		RN73G2A913D	± 0.5%,1/10W	1	
R 22		CERMET RESISTOR	5.6KΩ		
		RK73M2A562J	± 5%,1/10W	1	
R 23		CERMET RESISTOR	220KΩ		
		RK73M2A224J	± 5%,1/10W	1	
R 24		CERMET RESISTOR	220KΩ		
		RK73M2A224J	± 5%,1/10W	1	
R 25		CERMET RESISTOR	15KΩ		
		RK73M2A153J	± 5%,1/10W	1	
R 26		CERMET RESISTOR	150KΩ		
		RK73M2A154J	± 5%,1/10W	1	
R 27		CERMET RESISTOR	15KΩ		
		RK73M2A153J	± 5%,1/10W	1	

*: Selected at factory

DRAWING № W4W22000 9/12

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
R 28		CERMET RESISTOR	15KΩ		
		RK73M2A153J	± 5%,1/10W	1	
R 29		CERMET RESISTOR	150KΩ		
		RK73M2A154J	± 5%,1/10W	1	
R 30		CERMET RESISTOR	15KΩ		
		RK73M2A153J	± 5%,1/10W	1	
R 31		CERMET RESISTOR	15KΩ		
		RK73M2A153J	± 5%,1/10W	1	
R 32		CERMET RESISTOR	150KΩ		
		RK73M2A154J	± 5%,1/10W	1	
R 33		CERMET RESISTOR	15KΩ		
		RK73M2A153J	± 5%,1/10W	1	
R 34		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 35		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 36		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 37		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 38		CERMET RESISTOR	47KΩ		
		RK73M2A473J	± 5%,1/10W	1	
R 39		CERMET RESISTOR	47KΩ		
		RK73M2A473J	± 5%,1/10W	1	
R 40		CERMET RESISTOR	18KΩ		
		RK73M2A183J	± 5%,1/10W	1	
R 41		NOT ASSIGNED			
R 42		NOT ASSIGNED			
R 43		NOT ASSIGNED			
R 44		NOT ASSIGNED			
R 45		NOT ASSIGNED			
R 46		NOT ASSIGNED			
R 47		NOT ASSIGNED			
R 48		NOT ASSIGNED			
R 49		CERMET RESISTOR	3.9KΩ		
		RK73M2A392J	± 5%,1/10W	1	
R 50		CERMET RESISTOR	3.9KΩ		
		RK73M2A392J	± 5%,1/10W	1	

* Selected at factory

DRAWING No W4W22000 10/12

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
R 51		CERMET RESISTOR	3.9KΩ		
		RK73M2A392J	± 5%,1/10W	1	
R 52		CERMET RESISTOR	3.9KΩ		
		RK73M2A392J	± 5%,1/10W	1	
R 53		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 54		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 55		CERMET RESISTOR	4.7KΩ		
		RK73M2A472J	± 5%,1/10W	1	
R 56		METAL FILM RESISTOR	6.2KΩ		
		RN73G2A622D	± 0.5%,1/10W	1	
R 57		VARIABLE RESISTOR	1KΩ		
		RGS4H102	1/4W	1	
R 58		VARIABLE RESISTOR	1KΩ		
		RGS4H102	1/4W	1	
R 59		VARIABLE RESISTOR	5KΩ		
		RGS4H502	1/4W	1	
R 60		VARIABLE RESISTOR	5KΩ		
		RGS4H502	1/4W	1	
R 61		CERMET RESISTOR	220Ω		
		RK73M2A221J	± 5%,1/10W	1	
R 62		METAL FILM RESISTOR	6.2KΩ		
		RN73G2A622D	± 0.5%,1/10W	1	
R 63		METAL FILM RESISTOR	7.5KΩ		
		RN73G2A752D	± 0.5%,1/10W	1	
R 64		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 65		CERMET RESISTOR	47KΩ		
		RK73M2A473J	± 5%,1/10W	1	
R 66		CERMET RESISTOR	390Ω		
		RK73M2A391J	± 5%,1/10W	1	
R 67		CERMET RESISTOR	82Ω		
		RK73M2A820J	± 5%,1/10W	1	
R 68		CERMET RESISTOR	1.5KΩ		
		RK73M2A152J	± 5%,1/10W	1	
R 69		CERMET RESISTOR	1.5KΩ		
		RK73M2A152J	± 5%,1/10W	1	
R 70		CERMET RESISTOR	330Ω		
		RK73M2A331J	± 5%,1/10W	1	
R 71		CERMET RESISTOR	1KΩ		
		RK73M2A102J	± 5%,1/10W	1	
R 72		CERMET RESISTOR	1KΩ		
		RK73M2A102J	± 5%,1/10W	1	
R 73		CERMET RESISTOR	22KΩ		
		RK73M2A223J	± 5%,1/10W	1	

* Selected at factory

DRAWING No W4W22000 11/12

ANRITSU CORP.

Parts List of: MW0944B
SMF 1.31/1.55UM UNIT
A1 I/O BOARD

Ref. No.	Part Code	Description	Rating	Qty	Note
R 74		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 75		METAL FILM RESISTOR	2KΩ		
		RN73G2A202D	± 0.5%,1/10W	1	
R 76		NOT ASSIGNED			
S 1		SWITCH			
		S-5050A3		1	
W 1		CABLE			
		W42W20554B		1	
W 2		CABLE			
		W42W20554C		1	

* Selected at factory

DRAWING No W4W22000 12/12

ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

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Ref. No.	Part Code	Description	Rating	Qty	Note
C 1		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 2		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 3		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 4		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 5		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 6		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 7		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 8		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 9		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 10		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 11		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 12		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 13		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 14		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 15		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 16		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 17		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 18		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 19		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 20		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 21		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 22		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 23		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	

* Selected at factory

DRAWING No W4W22011 1/1

ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
C 24		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 25		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 26		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 27		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 28		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 29		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 30		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 31		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 32		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 33		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 34		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 35		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 36		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 37		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 38		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 39		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 40		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 41		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 42		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 43		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 44		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 45		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 46		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	

* : Selected at factory

DRAWING № W4W22001 2/19

ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
C 47		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 48		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 49		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 50		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 51		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 52		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 53		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 54		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 55		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 56		TA ELECTLT CAP	4.7μ F		
		SVFC1D475M	± 20%,20V	1	
C 57		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 58		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 59		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 60		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 61		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 62		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 63		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 64		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 65		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 66		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 67		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 68		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 69		AL ELECTLT CAP	4.7μ F		
		KMG160VB-4R7(M)	± 20%,160V	1	

* : Selected at factory

DRAWING № W4W22001 3/19

ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
C 70		PLSTC FILM CAP	0.1μ F		
		CF822N2E104K	± 10%,250V	1	
C 71		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 72		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 73		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 74		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 75		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 76		CER CAP	56p F		
		CC732CH1H560J	± 5%,50V	1	
C 77		CER CAP	47p F		
		CC732CH1H470J	± 5%,50V	1	
C 78		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 79		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 80		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 81		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 82		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 83		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 84		NOT ASSIGNED			
C 85		NOT ASSIGNED			
C 86		NOT ASSIGNED			
C 87		NOT ASSIGNED			
C 88		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 89		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 90		NOT ASSIGNED			
C 91		NOT ASSIGNED			
C 92		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	

* : Selected at factory

DRAWING № W4W22001 4/19

ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
C 93		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 94		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 95		NOT ASSIGNED			
C 96		NOT ASSIGNED			
C 97		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 98		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 99		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 100		NOT ASSIGNED			
C 101		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 102		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 103		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 104		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 105		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 106		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 107		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 108		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 109		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 110		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 111		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 112		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 113		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 114		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 115		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	

* : Selected at factory

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
C 116		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 117		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 118		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 119		NOT ASSIGNED			
C 120		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 121		AL ELECTLT CAP	100μ F		
		CE04C1A101A	± 20%,10V	1	
C 122		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 123		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 124		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 125		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 126		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 127		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 128		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 129		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 130		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 131		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 132		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 133		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 134		CER CAP	1μ F,50V		
		CK737F1H105Z	+80/-20%	1	
C 135		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 136		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 137		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 138		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	

* : Selected at factory

DRAWING № W4W22001 6/19

ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
C 139		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 140		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 141		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 142		CER CAP	0.1μ F,100V		
		C3225Y5V2A104Z	+80/-20%	1	
C 143		NOT ASSIGNED			
C 144		NOT ASSIGNED			
C 145		NOT ASSIGNED			
C 146		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 147		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 148		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 149		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 150		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 151		CER CAP	100p F		
		CC732CH1H101J	± 5%,50V	1	
C 152		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 153		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 154		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 155		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 156		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 157		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 158		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 159		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 160		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 161		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	

* : Selected at factory

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
C 162		AL ELECTLT CAP	100μ F		
		CE04C1E101A	± 20%,25V	1	
C 163		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 164		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 165		AL ELECTLT CAP	4.7μ F		
		KME250T4.7(M)	± 20%,250V	1	
C 166		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 167		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 168		CER CAP	22p F		
		CC732CH1H220J	± 5%,50V	1	
C 169		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 170		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 171		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 172		CER CAP	0.1μ F,50V		
		CK733F1H104Z	+80/-20%	1	
C 173		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
C 174		CER CAP	0.01μ F		
		CK732B1H103K	± 10%,50V	1	
J 1		JACK	26P		
		H1F3FB-26DA-2.54DSA		1	
J 2		JACK	26P		
		H1F3FB-26DA-2.54DSA		1	
J 3		PLUG			
		27DP-LR-PC		1	
J 4		PLUG			
		27DP-LR-PC		1	
J 5		PLUG	2P		
		DF1-2P2.5DSA		1	
J 6		PLUG	2P		
		DF1-2P2.5DSA		1	
J 7		PLUG	5P		
		DF1-5P2.5DSA		1	
J 8		PLUG			
		FFC-3AMEP		1	
J 9		SOCKET			
		DIC-252		1	

* : Selected at factory

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
J 10		PLUG			
		FFC-3AMEP		1	
J 11		SOCKET			
		DIC-252		1	
J 12		PLUG	2P		
		FFC-2AMEP		1	
J 13		PLUG	3P		
		FFC-3AMEP		1	
J 14		SOCKET			
		DIC-252		1	
K 1		RELAY	12V		
		ATF203		1	
K 2		RELAY	12V		
		ATF203		1	
L 1		INDUCTOR	10μ H,± 10%		
		NL453232-100K	250m A	1	
L 2		INDUCTOR	10μ H,± 10%		
		NL453232-100K	250m A	1	
L 3		INDUCTOR	10μ H,± 10%		
		NL453232-100K	250m A	1	
L 4		INDUCTOR	10μ H,± 10%		
		NL453232-100K	250m A	1	
L 5		INDUCTOR	10μ H,± 10%		
		NL453232-100K	250m A	1	
L 6		INDUCTOR	10μ H,± 10%		
		NL453232-100K	250m A	1	
L 7		INDUCTOR	10μ H,± 10%		
		NL453232-100K	250m A	1	
L 8		INDUCTOR	22μ H,± 10%		
		NL453232-220K	180m A	1	
L 9		INDUCTOR	22μ H,± 10%		
		NL453232-220K	180m A	1	
L 10		INDUCTOR	22μ H,± 10%		
		NL453232-220K	180m A	1	
L 11		NOT ASSIGNED			
L 12		INDUCTOR	1000μ H		
		TSL1110-102K	+ 10%,310m A	1	
L 13		INDUCTOR	1000μ H		
		TSL1110-102K	+ 10%,310m A	1	
L 14		INDUCTOR	1m H		
		SC02-101	2A	1	

* : Selected at factory

DRAWING № W4W22001 9/19

ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
L 15		INDUCTOR	100μ H, ± 10%		
		NL453232-101K		1	
Q 1		IC			
		NE5212AD		1	
Q 2		IC			
		EL2022CG		1	
Q 3		IC			
		EL2022CG		1	
Q 4		IC			
		EL2022CG		1	
Q 5		ZENER DIODE			
		1SZ52		1	
Q 6		ZENER DIODE			
		1SZ52		1	
Q 7		TRANSISTOR			
		2SA1424		1	
Q 8		DIODE			
		HSMS-2818		1	
Q 9		TRANSISTOR			
		2SC3734		1	
Q 10		IC			
		EL2022CG		1	
Q 11		ZENER DIODE			
		1SZ52		1	
Q 12		ZENER DIODE			
		1SZ52		1	
Q 13		TRANSISTOR			
		2SA1424		1	
Q 14		DIODE			
		HSMS-2818		1	
Q 15		TRANSISTOR			
		2SC3734		1	
Q 16		IC			
		CLC231AI		1	
Q 17		DIODE			
		A1S2836		1	
Q 18		IC			
		78L05		1	
Q 19		TRANSISTOR			
		2SC3588-Z		1	
Q 20		IC			
		μ PC458G2		1	

• : Selected at factory

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
Q 21		DIODE			
		A1S2836		1	
Q 22		DIODE			
		A1S2836		1	
Q 23		DIODE			
		A1S2838		1	
Q 24		ZENER DIODE			
		1SZ52		1	
Q 25		TRANSISTOR			
		2SC1623		1	
Q 26		NOT ASSIGNED			
Q 27		NOT ASSIGNED			
Q 28		NOT ASSIGNED			
Q 29		IC			
		MC10E101FN		1	
Q 30		NOT ASSIGNED			
Q 31		TRANSISTOR			
		2SA1461		1	
Q 32		NOT ASSIGNED			
Q 33		NOT ASSIGNED			
Q 34		TRANSISTOR			
		2SC2954		1	
Q 35		TRANSISTOR			
		2SC2954		1	
Q 36		TRANSISTOR			
		2SC2559-MA		1	
Q 37		NOT ASSIGNED			
Q 38		TRANSISTOR			
		2SC2559-MA		1	
Q 39		NOT ASSIGNED			
Q 40		IC			
		LM337T		1	
Q 41		DIODE			
		A1SS123		1	
Q 42		ZENER DIODE			
		1SZ52		1	
Q 43		IC			
		MC10H102M		1	

• : Selected at factory

DRAWING № W4W22001 11/19

ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
Q 44		DIODE			
		A1S2836		1	
Q 45		TRANSISTOR			
		2SC1623		1	
Q 46		TRANSISTOR			
		2SA1424		1	
Q 47		TRANSISTOR			
		2SC3734		1	
Q 48		TRANSISTOR			
		2SC3734		1	
Q 49		DIODE			
		A1S2838		1	
Q 50		ZENER DIODE			
		RD11MB3		1	
Q 51		DIODE			
		ES01F		1	
Q 52		DIODE			
		ES01F		1	
Q 53		DIODE			
		ES01F		1	
Q 54		DIODE			
		ES01F		1	
Q 55		ZENER DIODE			
		RD5.1MB2		1	
Q 56		ZENER DIODE			
		RD5.1MB2		1	
Q 57		TRANSISTOR			
		2SA1424		1	
Q 58		TRANSISTOR			
		2SA1424		1	
Q 59		IC			
		μ PC1251G2		1	
Q 60		DIODE			
		A1S2836		1	
Q 61		TRANSISTOR			
		2SC1623		1	
Q 62		TRANSISTOR			
		2SC1623		1	
Q 63		TRANSISTOR			
		2SC1623		1	
Q 64		IC			
		μ PC1251G2		1	
Q 65		DIODE			
		A1SS123		1	

• : Selected at factory

DRAWING № W4W22001 12/19

ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
R 1		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 2		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 3		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 4		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 5		METAL FILM RESISTOR	240Ω		
		RN73G2A241D	± 0.5%,1/10W	1	
R 6		METAL FILM RESISTOR	120Ω		
		RN73G2A121D	± 0.5%,1/10W	1	
R 7		METAL FILM RESISTOR	270Ω		
		RN73G2A271D	± 0.5%,1/10W	1	
R 8		METAL FILM RESISTOR	270Ω		
		RN73G2A271D	± 0.5%,1/10W	1	
R 9		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 10		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 11		NOT ASSIGNED			
R 12		NOT ASSIGNED			
R 13		CERMET RESISTOR	330Ω		
		RK73M2A331J	± 5%,1/10W	1	
R 14		METAL FILM RESISTOR	680Ω		
		RN73G2A681D	± 0.5%,1/10W	1	
R 15		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 16		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 17		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 18		METAL FILM RESISTOR	68Ω		
		RN73G2A680D	± 0.5%,1/10W	1	
R 19		METAL FILM RESISTOR	360Ω		
		RN73G2A361D	± 0.5%,1/10W	1	
R 20		METAL FILM RESISTOR	360Ω		
		RN73G2A361D	± 0.5%,1/10W	1	
R 21		VARIABLE RESISTOR	1KΩ		
		RGS4H102	1/4W	1	•
R 22		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 23		METAL FILM RESISTOR	270Ω		
		RN73G2A271D	± 0.5%,1/10W	1	

• : Selected at factory

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
R 24		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 25		CERMET RESISTOR	33Ω		
		RK73M2A330J	± 5%,1/10W	1	
R 26		CERMET RESISTOR	2.2KΩ		
		RK73M2A222J	± 5%,1/10W	1	
R 27		CERMET RESISTOR	120Ω		
		RK73M2A121J	± 5%,1/10W	1	
R 28		CERMET RESISTOR	100KΩ		
		RK73M2A104J	± 5%,1/10W	1	
R 29		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 30		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 31		CERMET RESISTOR	1KΩ		
		RK73M2A102J	± 5%,1/10W	1	
R 32		CERMET RESISTOR	220KΩ		
		RK73M2A224J	± 5%,1/10W	1	
R 33		CERMET RESISTOR	47KΩ		
		RK73M2A473J	± 5%,1/10W	1	
R 34		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 35		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 36		CERMET RESISTOR	680Ω		
		RK73M2A681J	± 5%,1/10W	1	
R 37		CERMET RESISTOR	47KΩ		
		RK73M2A473J	± 5%,1/10W	1	
R 38		VARIABLE RESISTOR	10KΩ		
		RG04B103H	1/4W	1	•
R 39		VARIABLE RESISTOR	100KΩ		
		RG04B104H	1/4W	1	•
R 40		CERMET RESISTOR	680KΩ		
		RK73M2A684J	± 5%,1/10W	1	
R 41		CERMET RESISTOR	30KΩ		
		RK73M2A303J	± 5%,1/10W	1	
R 42		CERMET RESISTOR	12KΩ		
		RK73M2A123J	± 5%,1/10W	1	
R 43		VARIABLE RESISTOR	50KΩ		
		RG04B503H	1/4W	1	•
R 44		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 45		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 46		CERMET RESISTOR	47KΩ		
		RK73M2A473J	± 5%,1/10W	1	

• : Selected at factory

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
R 47		VARIABLE RESISTOR	100KΩ		
		RG04B104H	1/4W	1	•
R 48		CERMET RESISTOR	470KΩ		
		RK73M2A474J	± 5%,1/10W	1	
R 49		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 50		CERMET RESISTOR	2.2KΩ		
		RK73M2A222J	± 5%,1/10W	1	
R 51		VARIABLE RESISTOR	2KΩ		
		RGS4H202	1/4W	1	•
R 52		VARIABLE RESISTOR	2KΩ		
		RGS4H202	1/4W	1	•
R 53		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 54		CERMET RESISTOR	2.2KΩ		
		RK73M2A222J	± 5%,1/10W	1	
R 55		CERMET RESISTOR	2.2KΩ		
		RK73M2A222J	± 5%,1/10W	1	
R 56		CERMET RESISTOR	100Ω		
		RK73M2A101J	± 5%,1/10W	1	
R 57		CERMET RESISTOR	100Ω		
		RK73M2A101J	± 5%,1/10W	1	
R 58		NOT ASSIGNED			
R 59		NOT ASSIGNED			
R 60		NOT ASSIGNED			
R 61		NOT ASSIGNED			
R 62		NOT ASSIGNED			
R 63		NOT ASSIGNED			
R 64		NOT ASSIGNED			
R 65		NOT ASSIGNED			
R 66		NOT ASSIGNED			
R 67		NOT ASSIGNED			
R 68		NOT ASSIGNED			
R 69		CERMET RESISTOR	270Ω		
		RK73M2A271J	± 5%,1/10W	1	

• : Selected at factory

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref No.	Part Code	Description	Rating	Qty	Note
R 70		NOT ASSIGNED			
R 71		CERMET RESISTOR	150Ω		
		RK73M2A151J	± 5%,1/10W	1	
R 72		NOT ASSIGNED			
R 73		NOT ASSIGNED			
R 74		CERMET RESISTOR	68Ω		
		RK73M2A680J	± 5%,1/10W	1	
R 75		CERMET RESISTOR	220Ω		
		RK73M2A221J	± 5%,1/10W	1	
R 76		NOT ASSIGNED			
R 77		CERMET RESISTOR	22Ω		
		RK73M2A220J	± 5%,1/10W	1	
R 78		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 79		CERMET RESISTOR	22Ω		
		RK73M2A220J	± 5%,1/10W	1	
R 80		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 81		NOT ASSIGNED			
R 82		CERMET RESISTOR	15Ω		
		RK73M2A150J	± 5%,1/10W	1	
R 83		NOT ASSIGNED			
R 84		CERMET RESISTOR	4.7Ω		
		RK73M2A4R7J	± 5%,1/10W	1	
R 85		CERMET RESISTOR	4.7Ω		
		RK73M2A4R7J	± 5%,1/10W	1	
R 86		CERMET RESISTOR	15Ω		
		RK73M2A150J	± 5%,1/10W	1	
R 87		NOT ASSIGNED			
R 88		CERMET RESISTOR	4.7Ω		
		RK73M2A4R7J	± 5%,1/10W	1	
R 89		CERMET RESISTOR	4.7Ω		
		RK73M2A4R7J	± 5%,1/10W	1	
R 90		CERMET RESISTOR	4.7Ω		
		RK73M2A4R7J	± 5%,1/10W	1	
R 91		CERMET RESISTOR	4.7Ω		
		RK73M2A4R7J	± 5%,1/10W	1	
R 92		METAL FILM RESISTOR	51Ω		
		RN73G2A510D	± 0.5%,1/10W	1	

• : Selected at factory

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref No.	Part Code	Description	Rating	Qty	Note
R 93		CERMET RESISTOR	12KΩ		
		RK73M2A123J	± 5%,1/10W	1	
R 94		METAL FILM RESISTOR	270Ω		
		RN73G2A271D	± 0.5%,1/10W	1	
R 95		VARIABLE RESISTOR	500Ω		
		RGS4H501	1/4W	1	•
R 96		METAL FILM RESISTOR	240Ω		
		RN73G2A241D	± 0.5%,1/10W	1	
R 97		METAL FILM RESISTOR	270Ω		
		RN73G2A271D	± 0.5%,1/10W	1	
R 98		METAL FILM RESISTOR	270Ω		
		RN73G2A271D	± 0.5%,1/10W	1	
R 99		CERMET RESISTOR	12KΩ		
		RK73M2A123J	± 5%,1/10W	1	
R 100		NOT ASSIGNED			
R 101		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 102		CERMET RESISTOR	22KΩ		
		RK73M2A223J	± 5%,1/10W	1	
R 103		METAL FILM RESISTOR	120Ω		
		RN73G2A121D	± 0.5%,1/10W	1	
R 104		METAL FILM RESISTOR	200Ω		
		RN73G2A201D	± 0.5%,1/10W	1	
R 105		CERMET RESISTOR	380Ω		
		RK73M2A391J	± 5%,1/10W	1	
R 106		CERMET RESISTOR	330Ω		
		RK73M2A331J	± 5%,1/10W	1	
R 107		METAL FILM RESISTOR	51Ω		
		RN73G2A510D	± 0.5%,1/10W	1	
R 108		NOT ASSIGNED			
R 109		NOT ASSIGNED			
R 110		NOT ASSIGNED			
R 111		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 112		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 113		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 114		CERMET RESISTOR	100Ω		
		RK73M2A101J	± 5%,1/10W	1	
R 115		VARIABLE RESISTOR	200Ω		
		RGS4H201	1/4W	1	•

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
R 116		CERMET RESISTOR	4.7KΩ		
		RK73M2A472J	± 5%,1/10W	1	
R 117		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 118		CERMET RESISTOR	8.2KΩ		
		RK73M2A822J	± 5%,1/10W	1	
R 119		CERMET RESISTOR	2.2KΩ		
		RK73M2A222J	± 5%,1/10W	1	
R 120		CERMET RESISTOR	470Ω		
		RK73M2A471J	± 5%,1/10W	1	
R 121		CERMET RESISTOR	100Ω		
		RK73M2A101J	± 5%,1/10W	1	
R 122		CERMET RESISTOR	33KΩ		
		RK73M2A333J	± 5%,1/10W	1	
R 123		CERMET RESISTOR	33KΩ		
		RK73M2A333J	± 5%,1/10W	1	
R 124		CERMET RESISTOR	1MΩ		
		RK73M2A105J	± 5%,1/10W	1	
R 125		CERMET RESISTOR	510Ω		
		RK73M2A511J	± 5%,1/10W	1	
R 126		CERMET RESISTOR	510Ω		
		RK73M2A511J	± 5%,1/10W	1	
R 127		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 128		CERMET RESISTOR	51Ω		
		RK73M2A510J	± 5%,1/10W	1	
R 129		CERMET RESISTOR	4.7KΩ		
		RK73M2A472J	± 5%,1/10W	1	
R 130		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 131		CERMET RESISTOR	8.2KΩ		
		RK73M2A822J	± 5%,1/10W	1	
R 132		NOT ASSIGNED			
R 133		CERMET RESISTOR	2.2KΩ		
		RK73M2A222J	± 5%,1/10W	1	
R 134		CERMET RESISTOR	1MΩ		
		RK73M2A105J	± 5%,1/10W	1	
R 135		VARIABLE RESISTOR	200KΩ		
		RGS4H204	1/4W	1	
R 136		CERMET RESISTOR	150Ω		
		RK73M2A151J	± 5%,1/10W	1	
R 137		CERMET RESISTOR	100KΩ		
		RK73M2A104J	± 5%,1/10W	1	
R 138		CERMET RESISTOR	220KΩ		
		RK73M2A224J	± 5%,1/10W	1	

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ANRITSU CORP.

Parts List of: MW0944B
SMF1.31/1.55UM UNIT
A2 AMP

Ref. No.	Part Code	Description	Rating	Qty	Note
R 139		CERMET RESISTOR	3.9KΩ		
		RK73M2A392J	± 5%,1/10W	1	
R 140		VARIABLE RESISTOR	5KΩ		
		RGS4H502	1/4W	1	
R 141		CERMET RESISTOR	10KΩ		
		RK73M2A103J	± 5%,1/10W	1	
R 142		CERMET RESISTOR	22KΩ		
		RK73M2A223J	± 5%,1/10W	1	
R 143		METAL FILM RESISTOR	200Ω		
		RN14K2E2000D	±0.5%,1/4W		
R 144		METAL FILM RESISTOR	200Ω		
		RN14K2E2000D	±0.5%,1/4W		
T 1		TRANSFORMER		1	W39T5482
Z 1		ZBF503D-00		1	
Z 2		ZBF503D-00		1	
Z 3		ZBF503D-00		1	
Z 4		ZBF503D-00		1	
Z 5		ZBF503D-00		1	
Z 6		TO-370A	1KΩ (0℃) 0.35%/℃ 1/10W	1	

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Anritsu

ANRITSU CORPORATION
5-10-27, Minamiazabu, Minato-ku, Tokyo, 106 Japan
PHONE. 03-3446-1111
TELEX J 34372 ANRITU

MP MASTER
MA35859